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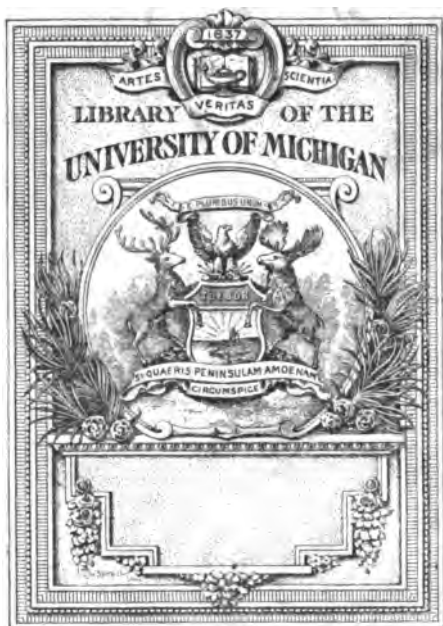
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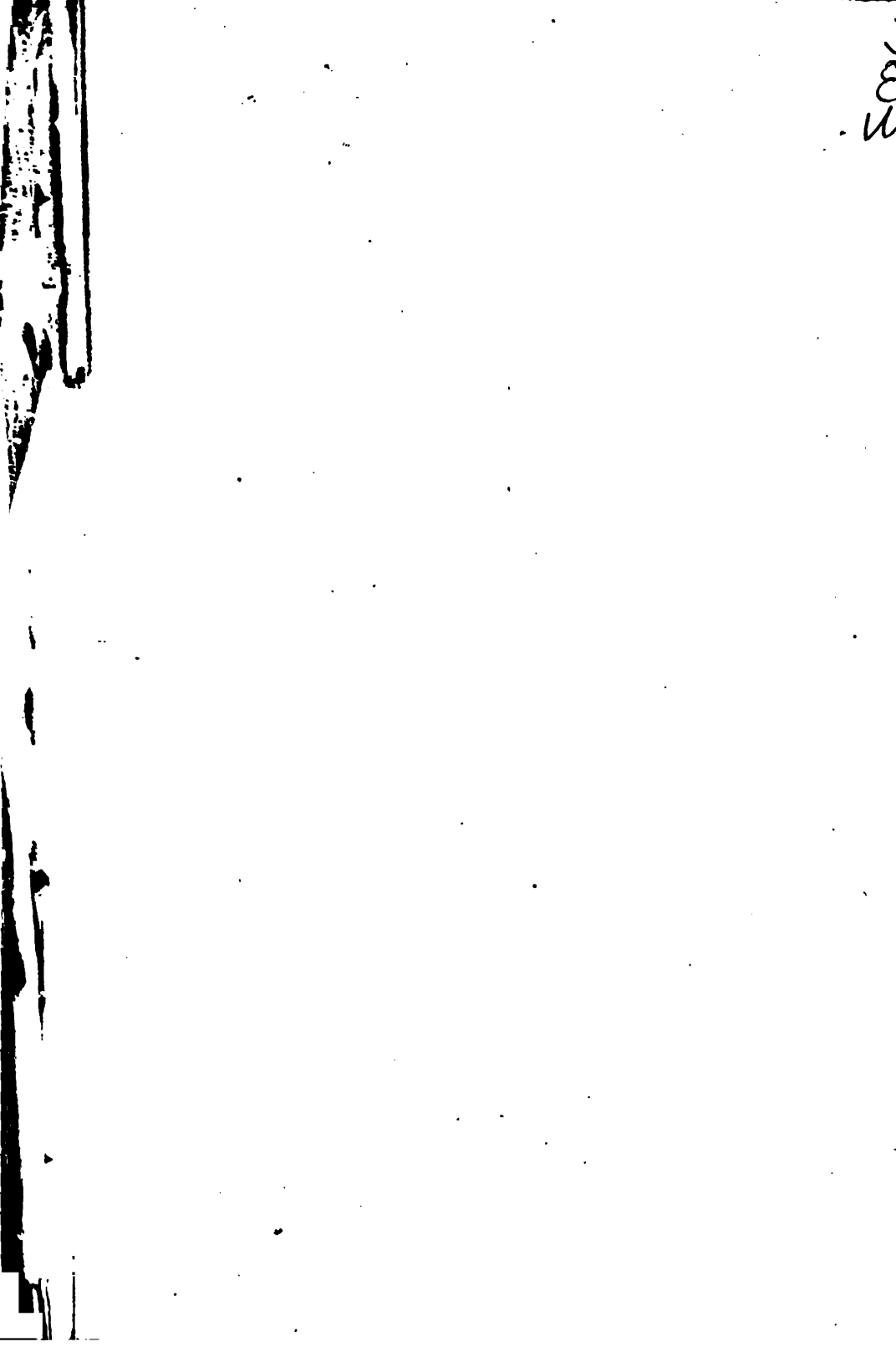
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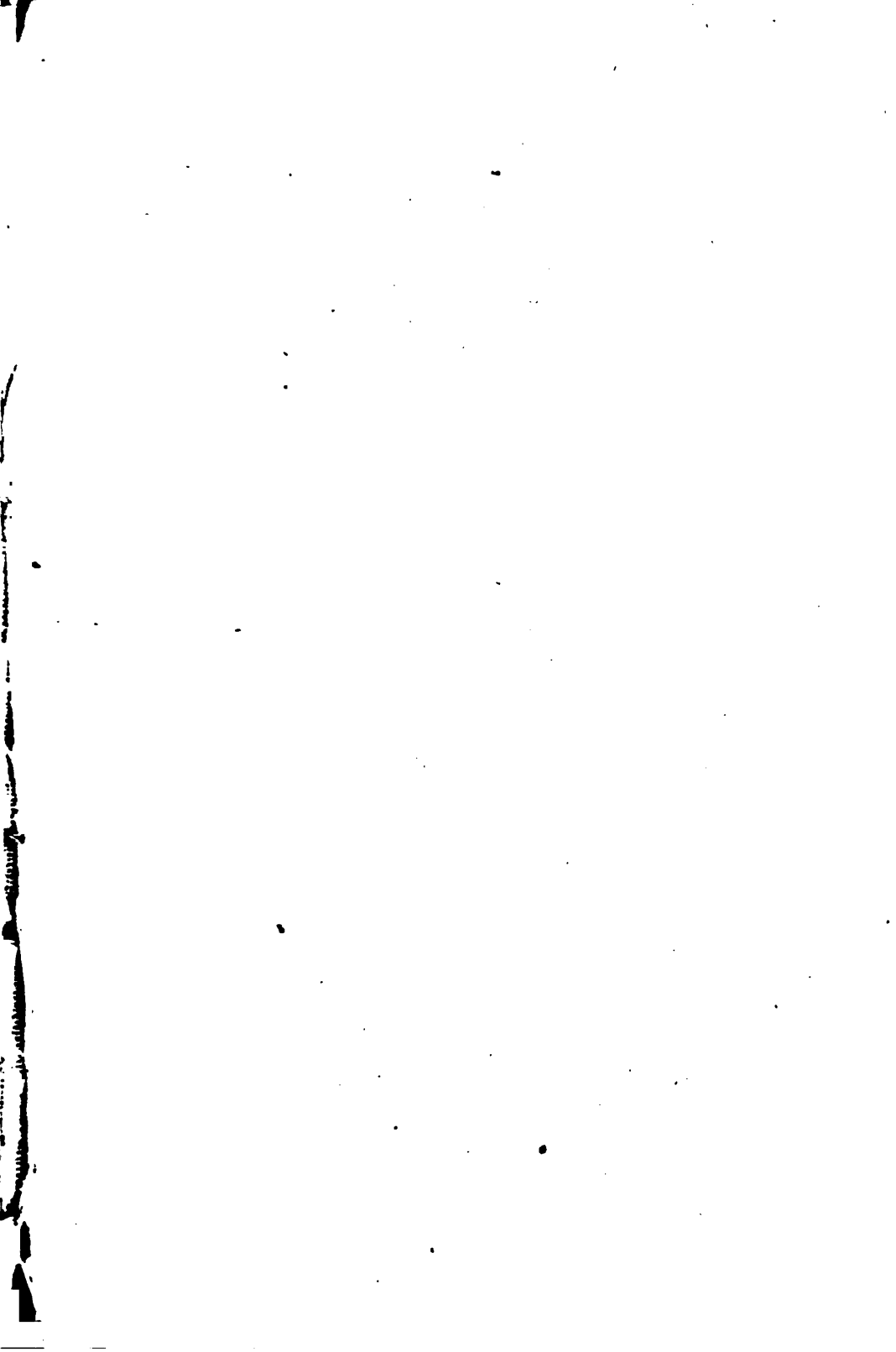
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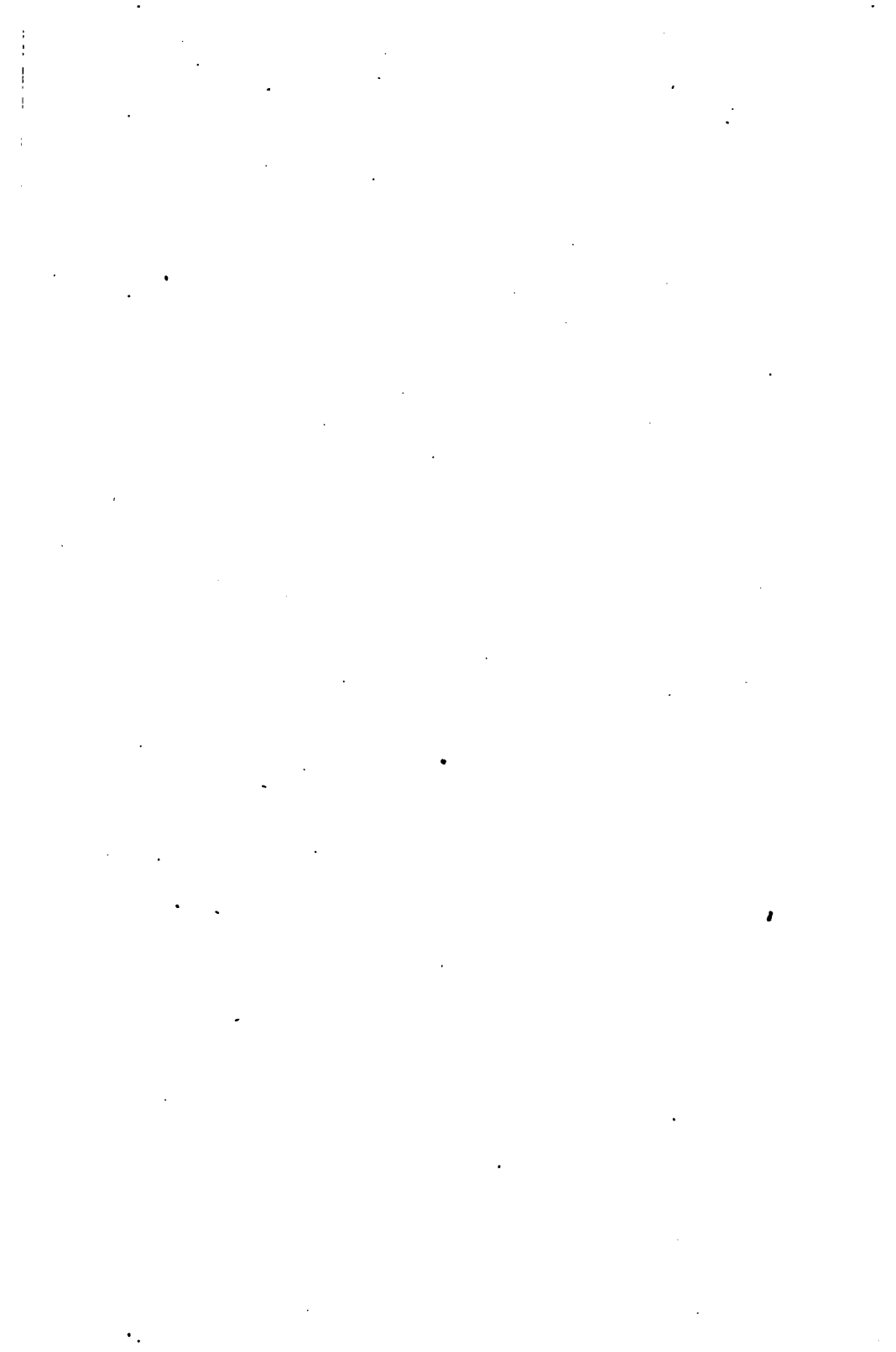
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FOR 1899-1900.

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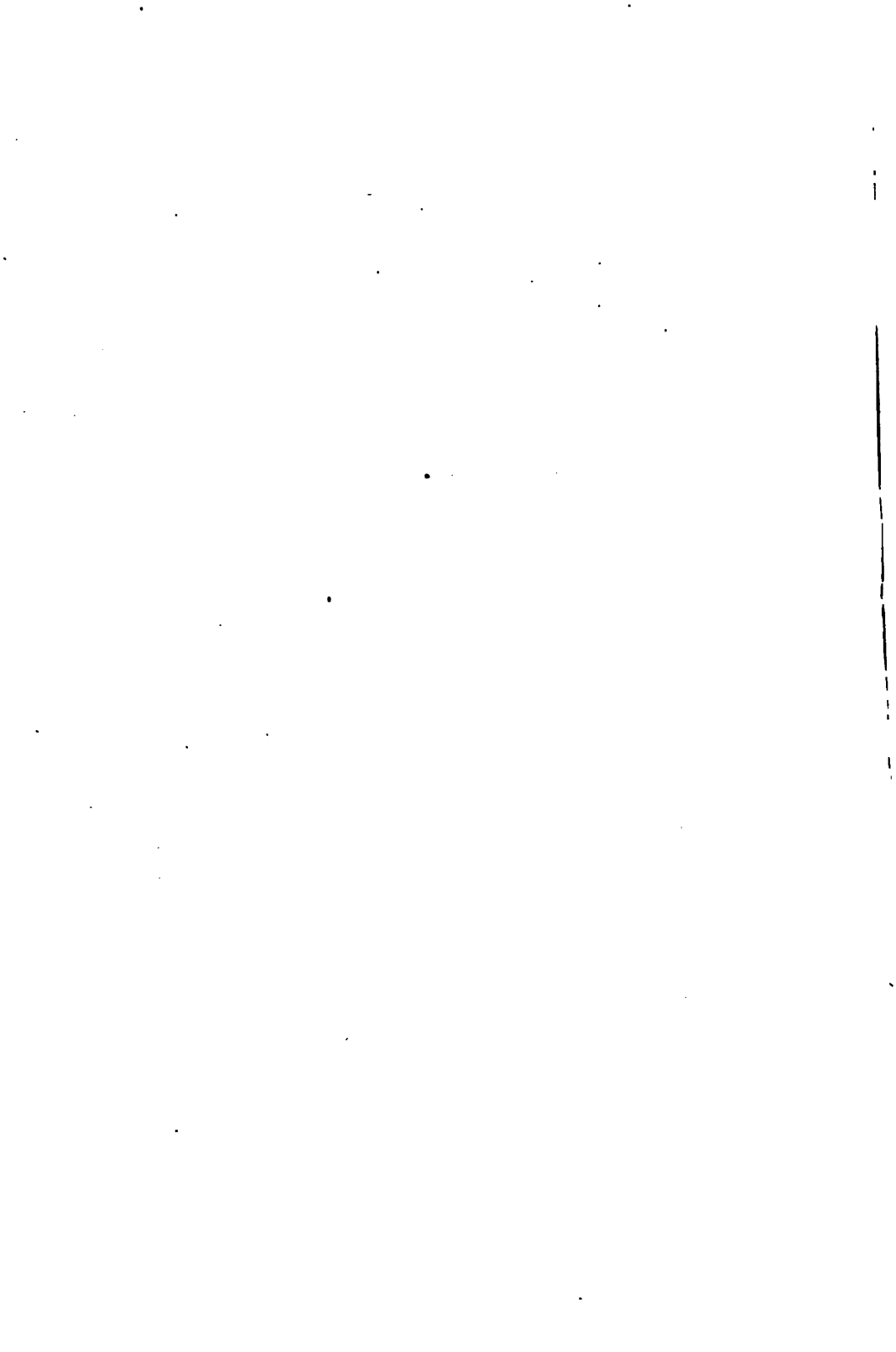
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NINTH BIENNIAL REPORT

OF THE

BUREAU OF

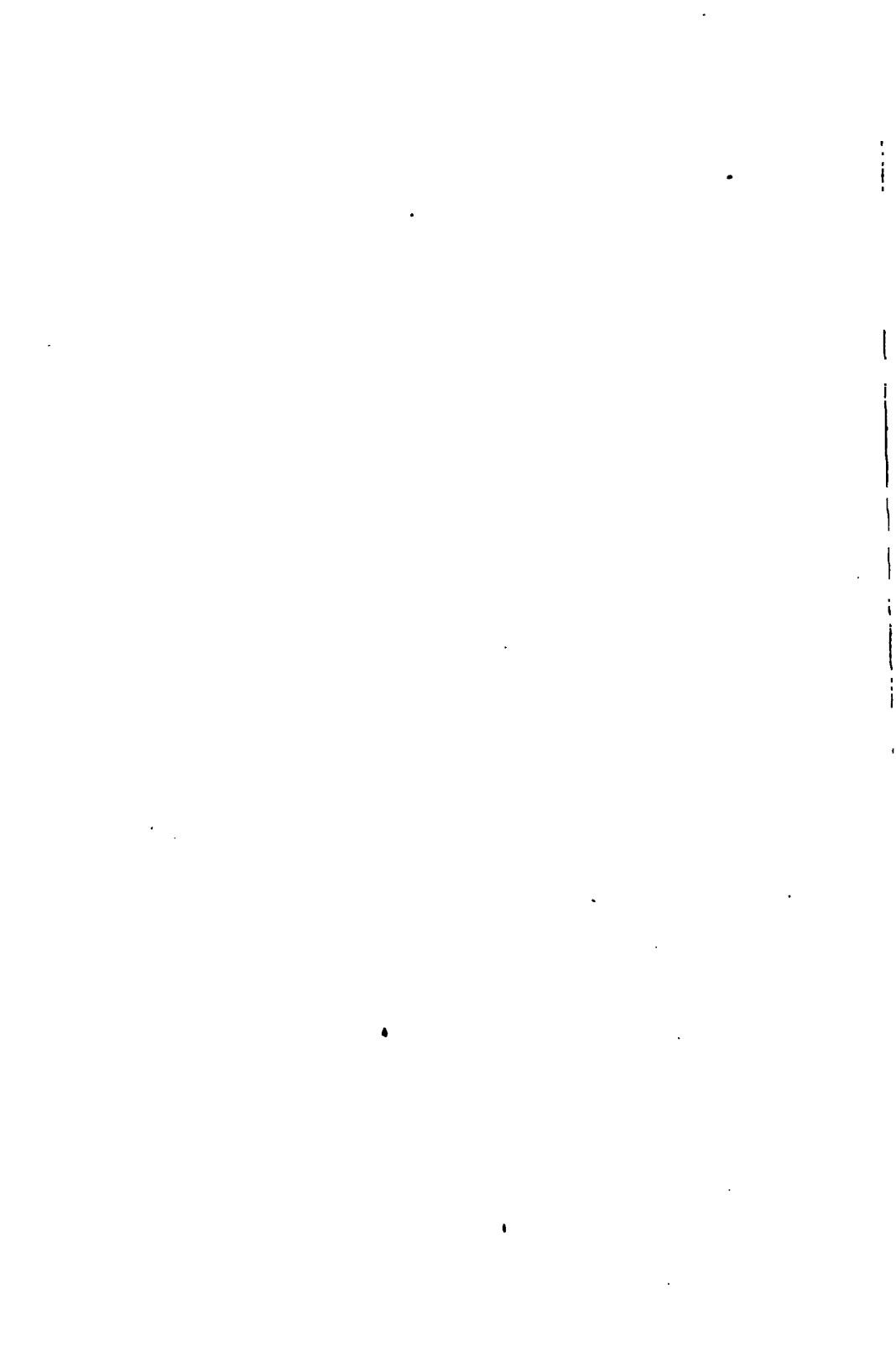
Labor and Industrial Statistics

STATE OF WISCONSIN,
1898-1899.

HALFORD ERICKSON, Commissioner.



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1901



LETTER OF TRANSMITTAL.

BUREAU OF LABOR,
INDUSTRIAL AND CENSUS STATISTICS,

MADISON, Wis., September 30, 1900.

To His Excellency HON. EDWARD SCOFIELD,

Governor of Wisconsin.

DEAR SIR :—I have the honor to transmit herewith the Ninth Biennial Report of the Bureau as required by the laws of this state.

Very respectfully yours,

HALFORD ERICKSON,

Commissioner.

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INTRODUCTION.

This is the Ninth Biennial Report of the Bureau of Labor and Industrial Statistics of Wisconsin. It consists of seven parts, each one of which is devoted to a separate line of work.

PART I.

The first part consist of compilation of the laws of this state that relate more directly to labor, or to wage-earners. The real reason for devoting labor and space to this matter is found in the fact that there seemed to be a demand on the part of members of trade unions and others for some convenient compilation of this kind. The increasing complexity of our industrial system, the aggressive position often assumed by both labor and capital, and the disastrous and far reaching effect of a war between these two forces demands on the part of every wage-earner a better understanding of his legal rights and duties. The unions also realize this and therefore devote more efforts in ascertaining their legal standing with reference to the various questions that arise than ever before. This is apparent on every hand. During the past few years there is hardly a question in which a union or a laborer, as such, may be involved that the Bureau has not been asked to furnish the law upon. It is mostly in response to this that this part has been prepared. As there seems to be a demand for these laws, and as this is the only compilation of the same outside the statutes, there are reasons to believe that this work will be of some service.

The compilation was carefully made and will be found reliable. In connection with the various laws brief references to important decisions bearing upon them are also presented.

PART II.

This part may be said to be a history of the Bureau and its work. It contains a brief account of its establishment and growth, together with a synopsis of the leading facts and more important conclusions of each one of the reports issued by it. In this connection an effort was also made to show the course of wages in our manufacturing and other industries during the time the Bureau has been in existence, or from 1883 to 1897 inclusive. To this end, the facts upon which the presentations of wages in each report are based, were re-classified, re-arranged and presented in such a way as to show, from year to year, for each industry represented, not only the classified daily wages, but the average yearly earnings. The presentations are made in tables, diagrams, and texts. On the whole, this part can be said to contain a complete account of what has been done through this Bureau, during the period covered, not only in the statistical line, but in the way of enforcing the factory laws.

This part is not without value. While no new facts were gathered for it, old facts were presented in a new light. Even the mere account of the growth and work of the Bureau is of some importance. It shows through what stages it has come to be what it is. It again brings to the surface many of the more important results of its work. This is of interest to the general reader as well as to the special student. The most valuable portion of this part, however, is perhaps that which deals with the course of wages. This amounts practically to a separate study. In fact, it involves much more labor than most separate investigations. The expenditure of this labor, however, is fully warranted by the results. More complete and reliable comparisons of wages than those given it is almost impossible to obtain.

PART III.

Child labor is the subject of this part. It opens with a review of this question in England since the advent of the factory system. Then it deals with the same question in the

United States and in a general way in Wisconsin. This review is in the nature of an introduction. While not exhaustive it points out the condition during the early days of the factory system, the struggle for legislation, what was finally accomplished in this respect and the effect of these laws. The condition in Wisconsin is then dealt with in detail. A brief theoretical discussion of the subject is followed by a minute investigation of the condition of 4,756 working children, an investigation that among other things embraced the age, wages, schooling, place of birth, occupation of father and the condition in general of the family. Then follows a detailed investigation of the condition of families who permitted children under the factory age to be employed. This part reveals some interesting facts. It shows conclusively that of the parents who violated the law by putting their children to work, all were driven to it by necessity. After having discussed these points, the employers' side is taken up, and in this connection some interesting facts are presented. The views of the employers were obtained concerning the effect of the enforcement of the child labor law upon the number of children employed, and upon their business. These views are fully presented and analyzed. The conclusions are important and can be studied with profit from both a business and social point of view. The compulsory school laws in this state are also analyzed, and the part ends with a careful discussion of the legal position of the child and obligations and rights of parents.

PARTS IV AND V.

Part IV is devoted to a presentation and comparison of our manufacturing returns for 1897 and 1898. Part V covers the same ground for 1898 and 1899. As has been explained elsewhere, the greater proportion of the manufacturing establishments in this state, report annually to this Bureau. These reports cover with considerable detail the business for the year. The facts thus obtained, which are uniform from year to year, are presented in such a way as to bring those of the same establishments in each industry, for two successive years, into absolute comparisons.

The investigations were limited to the mode of organization and the number of partners and stockholders; the capital invested; cost value of raw materials and supplies; the total value of the goods made or work done; the number of days in operation; the proportion of business done; the number of day, hour and piece hands; the number of persons employed each month; the classified weekly earnings; the total amount paid as wages and salaries respectively.

This line of investigation was begun in 1896 and has been continued each year since. The real purpose of the same is to ascertain whether our manufacturing industries are growing, standing still, or losing ground; whether the progress, if any, keeps pace with the increase in population, and the condition in each industry. In considering the elements investigated it will be noticed that they are the very ones that bear upon these problems.

These yearly investigations do not, in any case, amount to a complete census in the sense of the usually accepted meaning of this word. With a census, when applied to manufactures, is ordinarily understood a complete enumeration of the facts of all the manufacturing establishments in a state or country, whether big or little. A census is a big and costly undertaking that this country only enters upon once every ten years, and that it usually takes several years to complete. The investigations referred to here are limited to about two-thirds of the productive capacity in the state, and each comparison is based upon reports from identical establishments. The underlying theory is, that what is true of the business of those plants which turn out about 66 per cent. of the product is true for all. Thus it has been assumed that, if the industries and plants investigated, showed a good condition, the condition for all was also good; or, if they showed an increase in the various elements, there was a corresponding increase for the state. This assumption is valid both from a scientific and statistical point of view. While not a census, these investigations amount to very much the same thing. They show the growth, condition and trend of business in our manufacturing industries.

Facts, such as those obtained from these investigations, are more important because of the industrial position of Wisconsin.

sin. Within comparatively few years Wisconsin has become one of the great manufacturing states of the union. This is plain from the following facts: In 1880 there were more than twenty states in the country which turned out products of greater value than those of Wisconsin. In 1890, or ten years later, Wisconsin was the ninth in order in this respect. This is certainly a remarkable progress, a growth equalled by very few of the sister states at any period of their existence. The census of 1900 will unquestionably show that there are not over seven or eight among the states which turn out a greater product than Wisconsin. This surprising development is no doubt largely due to a favorable situation with regard to transportation and to the great natural resources of the state in the way of raw material, water power, etc. The effect of this rapid industrial progress upon our population and institutions has also been great. Hundreds of thousands of persons depend for their very livelihood upon these industries. That our industrial conditions should be watched, and that reports upon them should be of value is therefore hardly open to dispute.

Facts bearing upon industrial and business conditions are also eagerly sought. The man of business today must know not only what is the condition in his immediate locality, state or country, but of the world; and not only of the industry in which he is engaged, but of production in general. Working men, members of trades unions, also are scanning wage-returns and industrial reports for light and guidance. The demand for such information is universal. The result of this demand is that both state and national government have established bureaus for the collection and dissemination of industrial facts; that producers in the various lines, either through private organizations or trade journals, are making extensive reports; and that the city dailies are daily devoting pages to market and other reports of this kind. Upon such reports the future is discounted and industrial action regulated. All this only goes to show the importance attached to such information, and the place which it holds in our industrial system.

Among the more important results, with respect to the growth of our manufacturing industries since 1896, which developed through the above investigations, the following may be men-

tioned: In 1897 as compared with 1896, there was an increase for the state of 7.87 per cent. in the amount of capital invested; of 12.76 per cent. in the cost value of the raw material consumed; of 13.22 per cent. in the amount paid as wages; of 9.53 per cent. in the value of the goods made; and of 9.34 per cent. in the average number of persons employed.

In 1898 as compared with 1897, the respective increase in these elements was: Capital invested, 4.79 per cent.; material used, 14.82 per cent.; amount paid as wages, 10.21 per cent.; total value of goods made, 9.95 per cent.; and in the average number of persons employed, 9.95 per cent.

In 1899, as compared with 1898, the increase is represented by the following figures: Capital, 7.51 per cent.; material, 9.01 per cent.; wages, 13.88 per cent.; goods made, 12.91 per cent.; and average number of persons employed, 12.36 per cent.

These are the changes which took place between each year, and from these we summarize the increase in the volume of business during the period covered.

From 1896 to 1899 inclusive, the following changes took place: In the amount of capital invested in our manufacturing institutions there was an increase of 20.17 per cent., or of fully one-fifth. In the cost value of the raw material used there was an increase of 36.59 per cent., or over one-third. In the total amount paid as wages the increase amounts to 37.31 per cent. In the total value of goods made, or work done, the increase was 35.54 per cent. In the average number of persons employed it was 31.65 per cent.

These are the principal elements which are affected by business events. The course of these represents the course of business. The above figures indicate that, even if allowance is made for extraordinary fluctuations in prices, the volume of business in our manufacturing industries was at least one-third greater in 1899 than in 1896.

It may be noticed that for some of the elements included the increase was greater than for others. That such should be the case was only to be expected. The variations are largely due to the ups and downs in the market. The prices of material and of the finished product, for instance, are not often equally affected by changes in prices. Sometimes they even

move in opposite directions. Wages seldom increase at the same rate as the prices of the products. In the long run the tendency, for all the elements, is in the same direction. But as each is affected by special influences, they seldom keep an even pace. The smaller increase for capital invested is, of course, due to the fact that the fixed capital already in existence admitted of a greater volume of business without being proportionately increased. "Circulating capital" usually increases or decreases with the product, but this is not always true of "fixed capital."

But there are also a few other facts that are significant to the industrial situation and should be mentioned. These relate to the yearly earnings of the workers and to the days in operation. From the returns of 1,500 establishments it was found that average yearly earnings to each worker, or to each position which was constantly filled during the business year, was \$396.63 in 1896, \$416.63 in 1897, \$418.95 in 1898, and \$420.50 in 1899. This is an increase in 1899, over 1896, of \$23.87. When 992 establishments only were included, the average yearly earnings to each worker was \$367.10, \$378.60, \$383.95, and \$389.14 for the four years, 1896 to 1899 inclusive. The difference in the earnings in the two cases is due to the fact that in the former a larger proportion of industries with skilled and better paid workers is included. These figures, together with the increase in the total amount paid as wages, and in the average number employed, seems to indicate that labor held its own in the general increase.

In the days in operation the increase is equally gratifying. Thus we find that the average number of days in operation was 263.40 in 1896, 270.81 in 1897, 278.40 in 1898, and 281.90 in 1899. The increase in 1899 over 1896 thus amounted to 18.5 days. It is easy to see what this increase means, not only to employers, but the employees as well.

At first sight, this increase in the volume of business during the past four years may look somewhat large. It is also a fact that it is considerably above the average. With a proportionate increase for the other six years of the last decade, the next census would show an increase over that of 1890 of almost three-fourths. No such increase, however, can be shown for

these years. This will be plain when we consider the industrial conditions during this period. In 1891 and 1892 the conditions, at least on the surface, were good. Both years, according to the wage returns, showed an increase in the volume of business. In 1893, however, the financial crisis came. The effects of this crisis lasted for several years, and were of such nature as to reduce business in practically every line. The gain during the past four years, therefore, represents practically the entire gain during the past decade. Unfortunately the investigations described there do not extend back of 1896. Hence we have no fairly accurate way of measuring either the increase up to and including 1892 or the decline which began in 1893. It is believed, however,—and this belief is not entirely without statistical basis,—that the decline occasioned by the crisis more than offset the increase for 1890–92.

While, as already explained, the above investigations cover only a few years, and there is a scarcity of reliable data upon the course of production between 1890 and 1896, enough facts bearing upon it have been gleaned from various sources to venture a prediction as to the results of the present census. In 1890 the capital invested was \$246,515,404, the value of goods made, \$248,546,164, and the amount paid as wages, \$51,843,708. The same elements for the 1,245 establishments included in these investigations and which are believed to cover about 65 per cent. of the productive capacity for the state, in 1896 were: Capital, \$175,905,124; goods made, \$155,152,906; wages, \$26,066,343. For these 1,245 establishments, in 1899, the capital used amounted to \$211,385,187; the value of the goods made to \$210,294,248; and the amount paid in wages \$35,418,540. In round numbers this was an increase in 1899 over 1896 of about 32 per cent. These figures may be depended upon. If they constitute about 65 per cent. of the manufacturing capacity for the state, and the above assumption that the increase which took place in 1890–1892 was fully offset by the decline during the crisis is correct, the present census should show that the value of the product, and the amount invested during the census year was, in each case, in the neighborhood of \$325,000,000, and that over \$65,000,000 was paid as wages. This is merely an estimate. To prove correct the

above assumption must not only hold good, but the classification as to manufactured product for this census must also be the same as for the one of 1890.

Should this prediction prove true it will probably be found also that our productive capacity had fully kept pace with the increase in population. Wisconsin will undoubtedly show a greater increase in her population than the average for the country. There are many reasons why this should be so. In the first place the state is comparatively new and is less fully developed. It has had an abundance of cheap and even fairly good land. There are also reasons to believe that it suffered less from the crisis than many other states. The cheap lands have tended to absorb the surplus population in the cities, as well as to attract immigration from elsewhere. While all this is true, present indications tend to show that it would not be safe to place the increase in our population during the past ten years at a higher figure than 28 per cent., or slightly lower than that for our manufactures, which according to above figures would somewhat exceed 31 per cent.

As a whole these investigations have proved a success, and it is confidently believed that it is to the best interest of the state that they should be continued in the future.

PART VI.

Part VI relates to the employment and earnings in manufacturing industries, mercantile lines, skilled trades and logging.

Under Manufacturing Industries we find for each of 12 industries the average persons employed by month; the smallest, average, and greatest number of persons employed; the hour, day and piece hands; the classified weekly earnings; the number of days in operation; and the amount paid as wages. These presentations embrace 12 industries, or 221 establishments. This, however, is only a part of what is shown under this head. Following the above presentations will be found a series of exhibits in which the totals for the above 12 industries are combined with the totals for the 43 industries, which constitute the subject of the preceding part. As a result of this combina-

tion, we have the conclusions as obtained from the returns of 1,213 establishments in 55 industries.

Under Mercantile Establishments we find, for 13,808 persons in six mercantile lines, embracing 3,754 establishments, the average number of persons employed each month, and the classified weekly earnings. These facts are of some importance. Mercantile establishments are not often included in investigations of this kind. For this reason, data relating to employment and earnings in these occupations has not been widely distributed. The facts presented were obtained from about 40 per cent. of the establishments in the state, and may therefore be regarded as representative.

Under Skilled Trades, etc., we find the classified weekly earnings; the hour, day, and piece hands; the number employed by months in each of 14 skilled trades, and in three other industries. Together, the reports upon these points include 23,416 persons, or by far the greater proportion of employes in these times in the state.

Under Logging, etc., is found the time employed, the wages paid when board is included, and other facts concerning those who are employed at logging. This is the first time in this state that representative data upon these matters has been collected. The facts presented are therefore of special interest. In all 12,780 persons are included in these returns.

For Manufacturing, the returns cover the years 1898 and 1899. For the other industries or occupations in this part the returns cover the year 1898. In all cases, the facts were obtained directly from the employers and relate to the same matters. The presentations made are also uniform. Comparisons between the facts for the different industries can therefore be made. The importance of this part may be realized when it is found that 154,992 wage earners are considered.

PART VII.

This part relates to Factory Inspection. It shows what has been done in this branch of our duties during the present time. The work was classified according to its nature and as affected by the various laws. Thus we have factories in one class, cigar

shops in another, sweat shops in a third, etc. In the record of the inspections, Factories, etc., comes first. Then, in order, come Cigar Factories, Sweatshops, Tobacco Warehouses. The facts regarding these classes of places have been presented with considerable detail. Thus we find, first, tables giving the name, business, location and other facts bearing upon the importance of each establishment inspected. Then there is a list of the orders issued, and lastly, summaries and analyses of the work performed. Many other places such as hotels, schools, halls, mercantile establishments, etc., were also inspected. But of this work the record is less complete. Owing to the nature of these places a detailed record of them is of less value than of factories or places where production in one form or another is carried on. For each of these classes of places, however, full summaries of the inspections and the actions taken are presented. There is also a record of the prosecutions made. And the introduction includes a discussion, amounting practically to a brief, upon the factory laws.

During the present term the work of inspection has been carried on upon a much broader scale than in the past. In fact, the change in this respect is so great that it might almost be called radical. This improvement has been brought about through legislation. Up to 1899 the Bureau was provided with only two inspectors. The state also lacked many of the laws which are essential in all manufacturing states. That under such circumstances this Bureau should be able to render the best service was hardly to be expected. The situation was explained to the Governor and legislature with the result that the session of 1899 not only extended the factory acts, but increased the number of inspectors for the enforcement of these laws. Among the more important laws that were enacted at this session, the following may be mentioned: Chapter 77, requiring seats for female employes; Chapter 79, regulating the manufacture of cigars; Chapter 189, requiring suction devices on emery wheels; Chapter 232, regulating the manufacture of clothing, etc.; Chapter 274, regulating the employment of children. These laws are of the greatest importance. They contain so many provisions, however, that their enforcement increased the work of the inspectors over 100 per cent,

While the duties of the Bureau were thus largely increased, its powers to discharge these duties were also extended. As said above, additional inspectors were authorized. In fact, the legislature was so liberal in this respect that instead of two, as in the past, the Bureau now has seven inspectors.

While the last legislature thus doubled our duties, it trebled our power for performing these duties. On the face of it, this would seem to imply that the Bureau is exceptionally well equipped for the work it has to do. But now is this so? In order to answer this, it is necessary to refer to the conditions that existed before the actions of the above session. At that time, while the factory laws were less complete than now, they still constituted a respectable body. Regardless of this fact, however, two inspectors only were allowed for their enforcement. Considering this, also, the position of this state in point of manufacturing, together with the area it covers, it becomes plain at once that there could be no proper relation between the work to do, and the number of inspectors by whom it was to be done. Our duties at that time were entirely out of proportion to the number of inspectors. In fact, the discrepancy was so great that this was the main reason why more inspectors were authorized. When the basis for the respective increases is thus considered, the difference in their ratio means less than would at first appear. As a matter of fact, the change effected by the above laws, was one of degree only. The work of properly enforcing all the factory laws now in force is still greater than even the present number of inspectors is fully able to cope with.

The laws which so transformed the work of this Bureau went into effect in the spring and summer of 1899. For about sixteen months our work has thus been conducted on the new basis. During this period a great deal has certainly been accomplished. More places have been included in the inspection than ever before. Each place has also been inspected oftener or at shorter intervals than in the past. In fact, places where children were employed, or where effective work was needed for other reasons, have been visited once a month in some cases and every other month in others. The effects of this have been beneficial. It is only through thorough work at frequent in-

spectations that factory laws can be enforced. Experience has amply shown that every order issued by the inspectors must be followed up closely in order to receive the requisite attention. Occasional visits only are of little avail. They are no more effective in this work than that of a city police force would be if not constantly on duty. Factory inspectors, like policemen, in order to serve their purpose, must call early and often. They must be on hand at all times. Lapses in this respect are no more disastrous to effective work in the one case than in the other. Since the duties in the two cases are almost exactly alike the situation could hardly be different. These facts, however, are often overlooked not only by the public but by the legislators.

During the period, as given, the inspection includes 2,319 factories and workshops, employing 124,717 persons; 492 cigar factories, employing 2,067 persons; 79 sweatshops, employing 1,050 persons; 83 tobacco warehouses, employing 3,780 persons; and 573 other buildings such as school houses, mercantile establishments, hotels, etc. In addition to this we have also visited bowling alleys, summer gardens, messenger service and other places where children are employed. As said above, these places have been visited more than once during the period, many as often as once a month.

The orders issued at these visits numbered: Factories, etc., 19,878; cigar factories, 729; sweatshops, 144; tobacco warehouses, 168; other places, 925. This makes a good many orders. It is the result of persistent efforts on the part of the inspectors to discover and, if possible, remedy every violation of the factory laws. All of these orders have, of course, not been technically complied with, but through close watching and a firm policy we have succeeded in having the greater proportion of these violations corrected. Through this work, thousands of places have been more safe and healthy and hundreds of unfortunate children have been taken out of factories and placed in school. That this work is of some value to the state will hardly be questioned.

RECOMMENDATIONS.

In the preceding pages is thus presented a brief outline of the work in this Bureau during the present term. As said before, the duties of this Bureau are of two kinds,—to gather statistical information concerning the condition of labor and the relation between capital and labor, and to inspect factories, etc., for the purpose of enforcing the so-called factory laws. The former consist of the investigation of social and economic conditions by the so-called statistical method. The second consist of enforcing the factory laws and are therefore of the nature of police duties.

While these two classes of duties are distinct from each other, differing entirely as to their nature, no sharp line between them has been drawn in this report. The reason for this is plain. Both are combined in the same department and directed by the same persons. From this it necessarily follows that much of the work in both is performed by the same persons. There are too many examples for detailed enumeration. One illustration will therefore be made to cover all. The factory inspectors, for instance, make inspections, report upon them, issue orders to correct violations of the law, see to it that their orders are complied with, but they are directed from the Bureau, and their reports are also handled, compiled and analyzed in the Bureau. In some cases the inspectors are also employed for collecting other facts. Thus the greater proportion of the facts upon which the part relating to child labor in Wisconsin is based were obtained through the inspectors. Speaking more strictly, parts two to six, inclusive, belong to the statistical branch of our duties, while one and seven come under factory inspection.

The report is bulky, but it covers considerable ground. The statistical matter it contains is as important as any of the kind that can be had. It has also been condensed as much as possible without impairing its value; and in addition to this, was as carefully analyzed as the time would possibly permit. An examination of the various parts will show this to be the case. The inspection was also closely looked after. Every possible effort was made not only to discover violations of the laws but

to have these violations remedied. As much has been done in this respect as was possible with the present equipment. During the entire period every resource at the command of the Bureau has been taxed to its utmost in order to accomplish what the Bureau was created for. By thus doing our best, or by utilizing all the resources of the Bureau in the work, two objects were gained. In the first place it enabled us to know what the Bureau can do as now equipped; secondly, the weak and strong points in the factory laws were discovered. These facts are important. Not only should they be known to the legislature, but also by those who are employed at this work. What was thus developed may be summed in this way: The Bureau has less help than it could advantageously employ. The factory laws, as they stand at present, do not cover enough ground. For the best and most effective work, therefore, more help and more laws are needed. Legislation in either or both of these directions is clearly in the interest of the state. For these and other reasons I regard it as my duty to recommend:

That some steps be taken toward the establishment of free employment offices in this state.

That the working force of the Bureau be somewhat increased.

That a law be enacted requiring employers to report to this Bureau all accidents to persons in their employ which occur while they are engaged in their duties.

That the law relating to fire escapes be amended and extended so as to expressly include school houses, office buildings, etc.

That the law regulating the employment of children be made to expressly include bowling alleys, summer and beer gardens and places of amusement in general.

That the laws regulating the sanitary conditions be enlarged and that the Bureau be given greater power in their enforcement.

That the law relating to the swinging out of doors to exits be so amended as to expressly include factories, school houses, and public and business buildings in general.

Would also recommend that in each house of the legislature at the coming session, a committee on labor and factory legislation be created.

The above recommendations do not cover, by far, all the ex-

tra legislation of this kind that is needed in this state. They include only such laws and amendments that, at this time, are considered the most necessary. If the committees recommended are appointed, opportunity may perhaps be had, not only to consider other measures, but to subject the laws now in force to a thorough and much needed revision.

SPECIAL COMMITTEES.

The real reason for recommending committees on labor in the two houses is that this seems the best way in which to insure that full, free and thorough hearing and discussion of all proposed labor or factory legislation that is absolutely necessary to intelligent action. It is true that, in some respects, this is a new departure in handling factory or labor legislation. On the other hand it is a change that seems to be needed. The way in which this legislation has been disposed of in the past has not proved entirely satisfactory. Since there were no special committees on labor legislation such bills, when introduced, have to be referred to committees created for other work, work that in most case required their entire time. The result of this is easily seen. In many cases the bills in question became a side issue, receiving such attention only as could be spared from their regular duties. While Wisconsin has, on the whole, a fairly complete body of factory laws, there is a lack of uniformity and connection between the different acts. Many of the provisions are conflicting, some are indefinite as to their meaning, others fall short of the purpose for which they were enacted. Much of this is unquestionably due to the manner in which this class of legislation has been handled, and argues strongly in favor of the proposed change.

Factory or labor legislation implies state interference in industrial matters. By enacting such laws the state serves notice upon the employers that they must not conduct their business in such a way as to menace the health, safety and welfare of their employes. To the employes it means that where they, as a class, are too weak to defend their own rights, the state, in the interest of society, as a whole, steps in and takes their side. Such legislation favors the laborer,—the industrially

weak as against the industrially strong. It is state interference where competition fails to work out the best results.

Restriction of this nature tends to impose burdens upon the employer and thus, in some cases, to increase the cost of operating his business. If carried much farther in this than in other manufacturing states similarly situated, it might result in placing our manufactures at a disadvantage in the market. While there is no immediate danger of this, it is a point that should always be considered in passing upon such legislation.

As already alluded to, the laws should be so drawn as to be effective. Experience has shown that many labor laws, both in this and other states, are such that they cannot be enforced. In some cases the constitutional limit is overstepped; in others, the provisions are ambiguous or conflicting. In such cases there is usually much annoyance and unnecessary expense all around. Conditions of this kind should as far as possible be eliminated.

The demand for such legislation is growing. The reason for this is largely found in rapid industrial development. New problems that demand solution are constantly arising. Besides this, the solution of old ones is becoming more imperative. The points that must be cleared up in connection with each new law before it can be intelligently passed upon are also becoming more complicated. What in the past was plain is now an intricate question. In order to be on the safe side, every new bill should be considered from practically every point of view. How will it affect society as a whole? How each class? What relation does it bear to other laws? Can it be enforced? These are only a few of the questions that must be answered. It is true that the principles upon which labor legislation is based are settled. This, however, does not mean that all such bills, that are introduced at each session, are wise or would prove beneficial if they became law. There are bad bills as well as good. To single out those that ought to become law from those that ought not is no easy task. That this be done, however, is of the greatest importance. Under the competitive system the great problem is to so legislate as to secure the maximum amount of protection to labor without retarding industrial progress. That this cannot be done without a most careful consideration of every point involved is plain. The question is, how

such consideration may best be obtained. As said above, it can most likely be had through special committees. And it is for this reason that the appointment of such committees is recommended.

This is not intended as an argument for such committees. My only object is to repeat a few facts in connection with this move that are obvious to all. Such committees are needed. Of this there can be no dispute. No branch of legislation is more important than that on labor. Nor is there any subject upon which more new laws are asked. This alone is sufficient to sustain the proposition. Nor will anything special be said in favor of the other recommendations. If committees on such laws are created, there will be ample opportunities for a full discussion. A few points, however, may be mentioned.

EMPLOYMENT OFFICES.

Free employment offices may be defined as means maintained by the state for bringing work and the worker together. Under the present industrial system this is a very important state undertaking. Where conditions are ripe for them much good may be accomplished through it.

In any proposition to establish state employment offices three questions are likely to arise. These are:—Is such an undertaking within the proper sphere of the state? Are the conditions in this state right for such offices? What is likely to be the cost to the state of running them?

As to the first of these questions, little need be said. There is nothing about it that involves principles not already settled. Such step on the part of the state would not materially differ from much of the legislation in favor of labor, or the weaker classes, already enacted. If it is proper for the state to regulate the conditions of employment, it is also proper to provide means through which work and worker may meet. This has also been recognized. Many states have already established such offices. Many smaller communities have also tried their hand at it. In most cases these experiments have proved successful.

The second question may be more difficult. It is obviously a fact that the need of such offices depends largely upon in-

dustrial conditions. Where industry is limited there is little for such offices to do. Where highly developed and greatly diversified, such offices can find a vast field for usefulness. This latter point is amply illustrated by their success in Illinois and other manufacturing states. In Chicago alone they are the means by which thousands of persons every week find employment.

Now, what is the condition here? Is Wisconsin a manufacturing state? No one acquainted with the facts will attempt to prove the contrary. Wisconsin is an industrial state in every sense of the word. In 1890, the state occupied the ninth place in point of manufacturing of all the states in the union. Today it ranks even higher. Our industries are highly developed and use the best productive methods. Almost every important industry is represented, and they are widely distributed. There is not a part of the entire area of the state that is not known for one or more important industries. Our advanced development is not confined to manufacture alone but embraces farming as well as other branches. The result is that we have a large army of workers, many of whom are constantly moving from place to place, and from one industry to another. The farm laborer in the summer is a logger in the winter. The ups and downs in all lines of business—the busy and the dull season—all contribute to the uncertainty and shifting of employment. At one time work is to be had in one place, in another in some other place. In considering these and other facts, it will hardly be questioned that Wisconsin offers a splendid field of usefulness to free employment offices. The situation is such that almost any effort to secure employment for the unemployed will be of value.

The question of expense is important. In fact, it may prove the most important of all. Such offices cannot be maintained without cost. One for each industrial center in the state would require quite an outlay. This may prove the stumbling block. The state may not as yet be ready to assume it. On the other hand, there is no doubt that, if rightly established and managed, the public good from this undertaking would outweigh its cost. This can also be shown. In spite of this there are still uncertainties to be faced. There may be mismanagement. Pol-

ities may stand in the way of the best work. In some quarters there is also as yet a sentiment against all state action in this line. These and other facts make even those act cautiously who, on the whole, are friendly to such moves.

The matter of expense, however, need not entirely defeat this proposition. A fair start towards free employment offices in this state may be made at a comparatively small cost. The plan for this is far from a complicated one. It consists of simply directing this Bureau to open such service in connection with its Milwaukee office. Such additional duties the Bureau could readily assume. All the preparation that would be necessary to that end is the increase in its present force of one clerk, and a provision for the necessary stationery, an office being already provided. Practically, the only expense that would thus be incurred by the establishment of a free employment office in the most important and populous center of the state is the salary of a clerk.

That this undertaking would prove a success there is little doubt. Milwaukee, as said, is the most important industrial center in the state. Besides this, it is directly connected with every other part of the state, and within easy reach of Kenosha, Racine, Sheboygan, Fond du Lac, Oshkosh and other important manufacturing cities. It is the natural place for such an office, and its establishment there would certainly prove of great benefit to both labor and capital.

The introduction of such duties in the Milwaukee office of this Bureau might also lead to other efforts in this line. It might help to induce some of the larger manufacturing cities in the state to do similar work in connection with one or the other of the various city offices. One city, that of West Superior, has already tried this plan and with the best of success. There is not a manufacturing city in the state that does not offer a good field for a free employment office. Any step that may lead to their establishment is therefore worthy of encouragement.

ADDITIONAL HELP.

An increase in the inspection service and in the clerical force is recommended. The real reason for this recommendation is that the present force of the Bureau is too small for the amount of work there is to be done. It is true that the last legislature considerably increased the inspection service. On the other hand it is also a fact that it greatly increased our duties. As has been explained elsewhere, our increase thus offset the other to such an extent that the relation between the work required and our equipment to meet it was not greatly changed from the condition that existed before the legislation was had.

There is no part of the service of this Bureau that it would not be to the interest of the state to strengthen. Even one additional clerk would greatly improve the statistical service it renders. One more inspector would make this service vastly more efficient, though, for the best result, several would be needed. The Bureau should also have a lawyer on its staff. The legal work in connection with our duties is greatly increasing; and the present way of having to depend upon the county attorneys in every step is quite unsatisfactory. This is a conservative statement of the situation. There is plenty of data on hand with which to support it.

A large proportion of the work that comes under the inspectors is of such a character that it can be done fully as well by women as by men. This fact is mentioned here because the Woman's Club at their recent state convention strongly advocated an increase in the inspection service, and that at least one inspector should be a woman. This is a proposition that is worth considering. The Woman's Clubs of this state take a great deal of interest in the work in which we are engaged and during the past two years have been of the greatest assistance to the Bureau. Their strong moral influence is steadily exerted in behalf of the right. They represent the best sentiment in the community. When it is remembered that no law can be successfully enforced that is not backed up by a healthy public sentiment, the value of the influence of the Woman's Clubs becomes fully apparent. Without this influence and its effect on public sentiment, we should have accomplished less during the

present term than is now the case. The position these clubs have taken upon important public questions is highly commendable, and should receive all possible aid and encouragement from the legislature. By enacting their recommendations into law they would become still closer associated with the work. The importance of this is so great that the legislature cannot afford to disregard it.

In this connection another matter may be mentioned. It is quite likely that there are persons in this state who would serve as factory inspectors without pay. Now, if this really should be the case, much assistance in enforcing the factory laws might be had by the simple act of authorizing the Governor to appoint Honorary Factory Inspectors. It is true that this would be a new departure, one that, as yet, has nowhere been tried. It is a suggestion, however, that is worth investigating.

Supposing such a law was enacted, what class of persons would be the most likely to accept the appointments? Experience only can furnish an absolute answer. It is not improbable, however, that many of those who are almost constantly engaged in reform, relief, or philanthropic work of one kind or another might be willing, if not glad, to serve the state in this capacity. Such workers usually make it their business to investigate social conditions. They are always on the lookout for chances to be of some service, or to do good. By becoming Honorary Inspectors their opportunities for such work would be greatly enhanced. As such inspectors, they would have the right of entrance and inspection of any factory, place of employment, etc., in the state. What this would mean to them is readily seen. It would give them access to the very places they desire the most to reach, and where they can do the most good. This, of itself, would probably be enough of an inducement, in many cases, for undertaking the duties of inspection.

Would this proposition for Honorary Inspectors prove of any real benefit to the state? As there is no experience to be guided by, this question is not readily answered. It can be taken for granted, however, that success or failure would depend upon the kind of persons who would consent to act as inspectors. A successful inspector is generally noted for good judgment and interest in his work. Above all, he must be interested in his

duties. Unless he is he cannot enter upon them in the right spirit. If the right kind of persons could be secured as inspectors, there would be little or no doubt about the result. It would be a success from the start. If only inferior inspectors could be had, little would probably be accomplished. But even if the result should be below expectations, the state would be no worse off than before, as no expenses are involved.

Since success or failure depends upon the inspectors, the important question is, What are the chances under this plan for obtaining efficient service? In a measure the answer to this is suggested in above description of the kind of persons likely to accept, or seek such appointments. As no compensation is attached to the duties, they would not be eagerly sought. In nearly all the larger cities, however, there are a number of persons who devote a great deal of time to charity and reform work of various kinds. They do this largely because they have the time, means, and inclination for such work. That among these some might be found who would be willing to become Honorary Inspectors there is little doubt, and as these persons are interested in social work the chances are that they would make excellent inspectors. Of course, it is not to be expected that they should devote all their time to these duties, but even occasional inspections on their part would be of great value or assistance in enforcing the factory laws. ,

As to the amount of authority that ought to be given such inspectors, there may also be a question. It is probable, however, that it ought to be limited to the right of entrance and inspection. Such violations as they discovered they could report to the Bureau. Prosecutions, if necessary, could then be begun through one of the regular inspectors.

ACCIDENTS.

A law requiring employers to report upon all accidents to persons in their employ that happen while they are on duty should be enacted. There are many reasons for such a law. Some of these are of the greatest importance, others of less. From the point of view of the state, there are perhaps two that are of greater weight than others. In the first place the state

is interested in knowing all about its subjects. Upon the right to obtain any information that relates to the condition and welfare of the people, it has always insisted, as well as provided for. If there are any exceptions to the rule, such as is now the case in this state with reference to accidents, they are simply due to omission.

In the second place, the state is specially interested in accidents because of their serious effect upon the community. From these effects every manufacturing state in the country endeavors to protect itself. What else is the meaning of all this legislation upon the guarding of dangerous machinery, protection in case of fire, etc.? In order to enact wise laws, however, special information is necessary. This may be further illustrated. If the idea is to protect people from accidents, or to reduce them to a minimum, it is, at best, very doubtful whether any really effective remedy can be prescribed until after a thorough study of how the accidents mostly occur. Without detailed information as to the number and nature of accidents that occur, such a study of them as contemplated is out of the question.

In the past, repeated attempts to obtain such data have been made, but with only partial success. As matters now stand, employers are under no obligation to disclose the facts desired. This they often take advantage of. If they report at all as to accidents, it is only in such a way as suits their own convenience, not that of the state. It is true that some information in this line might be obtained through the party injured, or through his family or friends. But without even a list of the accidents, this method is certainly impracticable because of the amount of labor involved. The only practical way is through the employers. Since the information needed is not voluntarily given, it should be required by law. This matter is of sufficient importance to demand serious attention on the part of the legislative power.

OTHER RECOMMENDATIONS.

The remaining recommendations are devoted to amendments to laws already enacted. Police laws, or such as are dealt with here, are usually strictly construed, and for this reason admit of no construction beyond what is actually expressed. Many of our present laws are so worded that they fall short of their purpose. An example of this is furnished by the law requiring fire escapes on certain buildings. In enacting this law it was evidently the intention that it should cover all business and public buildings of certain kinds and sizes. But in enumerating the buildings, school houses and a few other kinds of buildings were omitted. The result of this is, that as the laws now stand, we cannot enforce fire escapes on the buildings thus omitted, no matter how badly such escapes may be needed. This is certainly a serious defect, one that should be remedied at the first opportunity. If any building should be provided with all reasonable means of protection in case of fire, it is our large and sometimes overcrowded school houses.

Another defect of a similar nature is found in the laws which regulate the employment of children. This law was intended to cover all children working for wages except those employed on the farm or similar occupations. Yet, as bowling alleys, summer and beer gardens and places of amusement were not expressly included in the wording of the law, there is question as to whether or not they come within it. This is certainly a grave omission. No time should be lost in correcting it.

In the late revision of the statutes the laws relating to the sanitary condition in factories and workshops, and to doors or exits were so mutilated that, as they now stand, they are practically inoperative. In fact, the omissions are of such character that entirely new laws upon these points are needed. It is to the best interest of the state that all the errors and shortcomings in the present laws which have thus been enumerated be corrected or remedied.

There are, as said already, many other laws besides those just mentioned, that, in the interest of effective service, should be amended, but those given are probably the most important,

I am pleased to acknowledge my indebtedness to Charles Lewiston, W. L. Bachelder, and Stephen W. Gilman who successively have served as deputy commissioners during the present term, and to Louis W. Krueger and other clerks and employes in the office. Am also much indebted to Norman B. Black, factory inspector, and H. P. Fischer, J. J. Williams, H. E. Polley, D. P. Doty and R. E. Bradford, assistant factory inspectors, for their efficient services.

HALFORD ERICKSON,
Commissioner.

PART I.

LAWS OF WISCONSIN RELATING TO LABOR.

LAWS OF WISCONSIN RELATING TO LABOR.

This part embraces practically all the laws relating more directly to labor, now in force in this state as compiled from the statutes of 1898.

The economic and social importance of the wage earning classes, the far-reaching effects of their frequent disputes and misunderstandings with their employers, and the growing complexity of our industrial system makes it necessary that almost everybody should possess, at least, a fair knowledge of the laws affecting labor. In presenting a careful compilation of these laws, therefore, the bureau feels that it is supplying a want and performing a service from which important benefits may be derived.

It is true that this information may be obtained from the Wisconsin statutes. These statutes, however, cannot always be consulted. There are many reasons for this. In the first they are too costly and therefore beyond the reach of most people. Then again, the provisions wanted, or which bear upon matters affecting the laborer are scattered throughout two large volumes and often so indexed and arranged that only lawyers and those who have the opportunity and time to familiarize themselves therewith can find them. That the statutes, as a rule, are beyond the ready use of the average citizen needs no argument and this furnishes ample justification for this undertaking.

It is therefore for the benefit and guidance of the laboring masses and those who have to do with labor that this work is chiefly intended, although it is hoped that it will be found useful to all others who may desire information along this line.

It has been the aim to be as thorough and comprehensive as

possible in the preparation of the work, and for that reason there has been embraced all laws that in any way relate to labor; in other words, the remedy prescribed by law for the infringement of a right has not only been given, but also the necessary steps by which that remedy may be obtained.

In the matter of arrangements the statutes have been followed as closely as possible. While often greatly abbreviated, only such matter being used as relates more directly to labor, the chapters and sections bear the same number here as in the statutes. The various provisions or laws are indexed, first, under their main head, and then under sub-heads, the number of the page as well as of the section being given in each instance. Omissions are indicated by stars.

The actual work of compilation was performed by Mr. D. F. Tyrrell of Marinette, Wis., who is connected with this bureau and has rendered faithful service.

CONSTITUTION OF THE STATE OF WISCONSIN.

PREAMBLE.

We, the people of Wisconsin, grateful to Almighty God for our freedom, in order to secure its blessings, form a more perfect government, insure domestic tranquility, and promote the general welfare, do establish this Constitution.

ARTICLE I.

Section 1. All men are born equally free and independent, and have certain inherent rights; among these are life, liberty, the pursuit of happiness. To secure these rights governments are instituted among men, deriving their just powers from the consent of the governed.

Section 2. There shall be neither slavery nor involuntary servitude in this State otherwise than for the punishment of crime, whereof the party shall have been duly convicted.

Section 3. Every person may freely speak, write and publish his sentiments on all subjects, being responsible for the abuse of that

right, and no laws shall be passed to restrain or abridge the liberty of speech or of the press.

* * * * *

Section 4. The right of the people to peaceably assemble to consult for the common good, and to petition the government or any department thereof shall never be abridged.

* * * * *

Section 9. Every person is entitled to a certain remedy in the laws, for all injuries or wrongs he may receive in his person, property or character; he ought to obtain justice freely, and without being obliged to purchase it, completely and without denial, promptly and without delay, conformably to the laws.

* * * * *

Section 11. The right of the people to be secure in their persons, houses, papers and effects against unreasonable searches and seizures, shall not be violated; and no warrant shall issue but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

Section 12. No bill of attainder, ex post facto law, nor any law impairing the obligation of contracts, shall ever be passed; and no conviction shall work corruption of blood or forfeiture of estate.

[From Wisconsin Statutes of 1898.]

CHAPTER 11.

LABOR DAY.

Section 137b. The governor, by proclamation, * * * may set apart * * * one day in each year to be observed as labor day.

CHAPTER 25.

UNIVERSITY OF WISCONSIN.

Section 377. There is established in this state at the city of Madison an institution of learning by the name and style of "the university of Wisconsin."

* * * * *

UNIVERSITY OF WISCONSIN. OBJECTS AND DEPARTMENTS.

Section 385. The object of the university of Wisconsin shall be to provide the means of acquiring a thorough knowledge of the various branches of learning connected with literary, scientific, industrial and

professional pursuits, and to this end it shall consist of the following colleges or departments, to-wit:

* * * * *

2. The college of mechanics and engineering.

UNIVERSITY OF WISCONSIN. DEPARTMENTS, WHAT EMBRACED IN.

Section 386. * * * The college of mechanics and engineering shall embrace practical and theoretical instruction in the various branches of mechanical and engineering science and art, and may embrace such additional branches as the regents may determine.
* * * *

CHAPTER 27.

MANUAL TRAINING.

Section 496b. Any board having charge of a free high school or of a high school having a course of study equivalent to the course or courses prescribed by the state superintendent for such schools may establish and maintain a department of manual training in connection with the school under its management. The expense of maintaining such department shall be provided for in the same manner as other expenses of maintaining high schools, and such department shall be under the management, direction and control of such board. The state superintendent shall, so far as his other duties may warrant, give such information and assistance as may seem necessary in organizing and maintaining such departments, and in arranging schemes and outlines of work; and with the aid of the inspector of high schools shall have the general supervision of all manual training departments established under this section; shall from time to time inspect the same, make such recommendations relating to their management as he may deem necessary, and make such report thereon as shall give full information concerning their number, character and efficiency. The state superintendent shall establish a standard of qualification for all teachers in such department, and may grant special certificates to such applicants as are fully qualified to instruct in special lines of manual work, which certificates shall be in such form and for such time as he may prescribe, and shall be regarded as qualifying the holders thereof to teach in any manual training department.

MANUAL TRAINING, STATE AID FOR.

*Section 496c. Any high school whose course of study or outline of work in manual training has been approved by the state superin-

*Amended by sec. 1, ch. 273, laws of 1899, by omitting words in brackets and increasing the amount appropriated to five thousand dollars.

tendent and whose teacher has been qualified may, upon application, be placed upon an approved list of schools maintaining manual training departments. A school once entered upon such list may remain there and be entitled to state aid so long as the scope and character of its work are maintained in such manner as to meet the approval of such superintendent (provided that he shall not place upon said list more than ten schools). On the first day of July in each year the clerk of each school board maintaining a school on the approved list or the city superintendent of any city where such an approved school is maintained, shall report to the state superintendent in such form as may be required, setting forth the facts relating to the cost of maintaining the manual training department thereof, the character of the work done, the number and names of teachers employed and the length of time such department was maintained during the preceding year. And upon the receipt of such report, if it shall appear that the department has been maintained in a satisfactory manner for a period of not less than six months during the year, the said superintendent shall make a certificate to that effect and file it with the secretary of state. Upon receiving such certificate the secretary of state shall draw his warrant for two hundred and fifty dollars payable to the treasurer of the district or corporation maintaining the school; provided, that the total amount expended for such purpose shall not exceed five thousand dollars in any one year.

CHAPTER 29.

STATE PRISON, MANUFACTURING IN; DEBT AGAINST STATE.

Section 561f. Said board (of control) may, whenever in the opinion of all its members the interest of the state requires it, establish a manufacturing business in the state prison, and for that purpose may create a debt against the state for any sum not exceeding one hundred thousand dollars; but no such debt shall be created without the written approval of the governor, secretary of state and attorney general. When the board shall determine to establish the business of manufacturing goods, wares and merchandise within such prison and shall have obtained such approval of the project, it shall file written estimates of the materials and their cost which it may be necessary to purchase, and on the approval thereof by the officers designated the secretary of state shall draw his warrant for the amount necessary to establish such business, not exceeding, however, the sum named.

CHAPTER 34.

PARADE GROUND, ENCROACHMENT ON; ABUSE, ETC., OF MEN.

Section 644. The commanding officer of any parade, review or drill and the officer in charge of any rendezvous or camp may cause the ground selected for that purpose to be marked or designated in such manner as not unnecessarily to obstruct travel on any public highway; and if any person, during the occupation of such ground for such military purpose, shall encroach upon such bounds or enter upon such ground without the permission of such officer, he may be arrested and kept under guard by order of such officer until the setting of the sun of the same day, or for such reasonable time as may be necessary to procure his arrest by the civil authorities. Any such offender may be arrested and punished as for a breach of the peace. If any person shall intercept, molest, insult or abuse any officer or enlisted man while in the performance of his military duty, he may be immediately arrested and kept confined at the discretion of the commanding officer of the forces engaged in the performance of such duty until the setting of the sun on the same day on which the offense shall have been committed or for such reasonable time as may be necessary to procure his arrest by the civil authorities. Any such offender may be arrested and punished as for a breach of the peace.

MEMBERS OF GUARD, DEFENSE OF.

Section 649c. If any member of the Wisconsin national guard shall be prosecuted by civil or criminal action for any act performed by such member while in the performance of his military duty and in pursuance thereof, the action against such member may, in the discretion of the governor, be defended by counsel appointed therefor by the governor upon the recommendation of the attorney general. The costs and expenses of any such defense shall be audited by the secretary of state and paid out of the state treasury.

CHAPTER 36.

WORK-HOUSES. ERECTION OF; BORROWING FUNDS.

Section 697a. Any county board may, by a majority vote of all the members thereof at any general or special meeting, provide for the establishment, erection and maintenance within the county of a work-house, the site for which shall comprise not less than one nor more than forty acres of land, and may purchase such site, advertise for

and adopt plans and specifications, and let a contract or contracts for the erection of such work-house and necessary outbuildings, and purchase the furniture and fixtures requisite therefor, provided that the amount to be expended for such purchases and the erection of such buildings shall not exceed ten thousand dollars. For the execution of such powers such board may borrow from time to time on the credit of the county such sum or sums of money as may be necessary therefor, and may issue bonds to secure the payment thereof, and make the same payable at such time as may be agreed upon, but not exceeding twenty years; they shall also levy such taxes as may be necessary to pay the principal and interest on such bonds and the expense of maintaining such work-house.

WORK-HOUSES. WHO TO BE COMMITTED TO; REFUSAL TO WORK.

Section 697c. Upon the completion of any such work-house the county clerk shall notify in writing each justice of the peace, police justice and the judge of every court held in his county of the fact, and thereafter whenever any male person over sixteen years of age shall be convicted within such county on the charge of vagrancy, vagabondage, petty larceny, drunkenness or disorderly conduct, he shall be punished by imprisonment in the work-house at hard manual labor, and the commitment shall be to such work-house at hard manual labor. Any person committed to such work-house who shall, being of sufficient ability to do so, refuse to work diligently, may be punished by being placed in solitary confinement therein not to exceed ten days for each refusal to so work, the period of such confinement being discretionary with the superintendent, and shall receive bread and water only during such time. No tobacco or intoxicating beverage shall be furnished to or used by any person committed to any work-house during his confinement therein.

WORK-HOUSES. PRISONERS' EMPLOYMENT, AND PRODUCT OF.

Section 697d. All such persons committed to any work-house shall be employed under the supervision of the superintendent at hard manual labor for not to exceed ten hours of each day (except Sundays) of such term of confinement at such work, labor or employment as may be provided by resolution of the proper county board or by the committee thereof hereinbefore provided for. The product of such work, labor or employment shall be the property of the county which maintains the work-house, and may be sold or otherwise disposed of by the superintendent according to the rules and regulations provided by the county board or its committee.

WORK-HOUSES. INMATES TO LABOR.

Section 697*q*. All persons of sufficient health and ability committed to any jail and sentenced to hard manual labor under the provisions of section 697*p* or the statutes therein referred to, when a work-house is provided by the trustees of the county jail as contemplated by this act, shall be kept and employed at such labor by and under the direction and supervision of the sheriff of the county or keeper of its jail for ten hours each day, Sundays excepted, but not to exceed that time; and such labor shall be performed in or about the county buildings or work-house provided by the trustees pursuant to these provisions.

WORK-HOUSES. REFUSAL TO WORK.

Section 697*s*. Any person committed to the county jail under these provisions, of sufficient health and ability, and who shall refuse to work diligently, shall be punished by being placed in solitary confinement in the jail, in the discretion of the sheriff, not to exceed ten days for each refusal to work diligently, but not beyond the term of his sentence, and shall receive bread and water only during said solitary confinement.

CHAPTER 40a.

POWERS OF COUNCIL.

Section 925-52-20. To license and regulate hackmen, draymen, cartmen, porters, omnibus drivers, cabmen and carmen, whether in the permanent employment of any corporation or not, and any other person who may pursue a like occupation, with or without vehicles, prescribe their compensation and establish and change from time to time stands for hacks and other public vehicles.

License hackmen.—A charter authorizing the council "to license and regulate hackmen, draymen, expressmen and all other persons engaged in carrying passengers, baggage or freight, and to regulate their charges thereon" applies only to those who are engaged in business as carriers of persons or property for hire, and not to those who, not being so engaged, merely hire out teams and vehicles to those who have property to transport, the hirer himself using and controlling the team and vehicle. *State vs. Robinson*, 42 Minn., 107.

Section 925-52-46. To license and regulate auctioneers. * * *

Public auctions.—Authority was given to regulate the time, place and manner of holding public auctions. It was declared in the charter that all ordinances shall be "for the government and good order of the city, for the suppression of vice, the prevention of crime and for the benefit of the health, trade and commerce thereof. An ordinance prohibiting any licensed auctioneer from selling at auction after sundown was held invalid, it not appearing that it was necessary for the accomplishment of any of the purposes specified. *Hays v. Appleton*, 24 Wis., 542.

Section 925-52-47. To license, regulate or restrain hawkers, peddlers and runners or solicitors for steamboats, vessels, cars, railroads, stages, public houses and other establishments, and other runners or solicitors for mercantile houses from other cities or towns for the sale of goods, wares and merchandise by sample, order or otherwise; and keepers or proprietors or gift book stores, gift concerts and other gift enterprises; fix and regulate the amount of licenses under this subdivision, prescribe the time for which such licenses shall be granted, provide and enforce penalties for carrying on either of said trades, kinds of business or employments without license, and regulate the manner in which they shall be carried on; provided, that no such license shall be granted for a less term than three months nor for a longer term than one year.

Hawkers and peddlers.—One who goes from house to house with rugs making contracts, leasing them at a sum payable weekly, which contracts provided that when the whole rental was paid the title passed to the person making payment, is a hawker or peddler. *People vs. Sawyer*, 64 N. Y. Rep., 333.

* * * * *

Section 925-52-64. To regulate or prohibit the use of any hall, theater, opera house, church, school house or building of any kind whatsoever to be used for the assemblage of people unless the same is provided with ample means for the safe and speedy egress of persons therein assembled, in case of alarm.

CHAPTER 41.

INSPECTORS OF PLUMBING.

Section 959-57. The board of public works, where such board exists, or the board of health of each city within section 959-55, shall appoint one or more inspectors of plumbing who shall be practical plumbers, and who shall hold office until removed by said board for cause. The compensation of such inspector or inspectors shall be determined by the board appointing them and be paid from the city treasury; they shall inspect all plumbing work in the city for which appointed, whether such work be new or consist of alterations and repairs; and shall report to said board all violations of any law, ordinance or by-law relating to such work and perform such other appropriate duties as may be required.

CHAPTER 46a.

BUREAU OF LABOR AND INDUSTRIAL STATISTICS.

OFFICE AND SUPPLIES.

Section 1021b. The bureau of labor and industrial statistics, heretofore established, is continued. A room or rooms in the capitol shall be set apart for the use thereof, and such printing shall be done for and such supplies furnished the same as may be necessary for the performance of the duties developed upon the officers thereof.

APPOINTMENT OF COMMISSIONER.

Section 1021c. A commissioner of said bureau shall be appointed by the governor, with the advice and consent of the senate, for the term of two years from the first Monday of February in the year of his appointment. Vacancies shall be filled for the unexpired term.

ASSISTANTS FOR.

Section 1021d. The commissioner may appoint a deputy, who, when acting for or instead of the commissioner, shall have equal authority with him. He may also appoint a clerk, a clerk and a typewriter operator, a factory inspector, an assistant factory inspector and a clerk and janitor. The factory inspector shall be a resident of Milwaukee, and he and the assistant inspector shall perform their duties under the direction of the commissioner. The inspector may rent an office in Milwaukee at an expense to the state not to exceed three hundred dollars a year; and the commissioner may expend not more than fifty dollars a year in the purchase of books and periodicals on labor and industrial subjects for the library of the bureau.

CHAPTER 152, LAWS OF 1899.

AN ACT authorizing the appointment of assistant factory inspectors, and to make an appropriation therefor.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. The commissioner of labor and industrial statistics shall have power to appoint six suitable persons as assistant factory inspectors who shall perform their duties under his direction and who may be removed by him for cause.

Section 2. Each of the said assistant factory inspectors shall be paid a salary at the rate of one thousand dollars per annum together with necessary traveling expenses to be paid out of money in the general fund not otherwise appropriated.

Section 3. All acts and parts of acts conflicting with the provisions of this act are hereby repealed.

Section 4. This act shall take effect and be in force from and after its passage and publications.

COMMISSIONER'S DUTIES.

Section 1021e. Said commissioner shall collect, collate and publish statistical and other information relating to the manufacturing interests, industrial classes and material resources of the state; he shall especially examine into the relations between labor and capital, the means of escape from, and the protection of life and health in, factories and work-shop, the employment of children, the number of hours of labor exacted from them and from women, the educational, sanitary, moral and financial condition of laborers and artisans; the cost of food, fuel, clothing and building material, the causes of strikes and lock-outs, and other kindred subjects pertaining to the welfare of the industrial interests and classes.

CHAPTER 158, LAWS OF 1899.

An Act relating to the duties of factory inspectors and amendatory of section 1021f of the statutes of 1898.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. Section 1021f of the statutes of 1898, is hereby amended by inserting the words "mercantile establishment" after the word "factory," and the words "or women" after the word "laborers" in the third line of said section; the words "or for suitable seats for women" after the word "operatives" in the sixth line of said section; the words "such seats for women" after the word "employees" in the ninth line of said section, and the words "mercantile establishment" after the word "factory" in the tenth and twelfth lines of said section, so that said section so amended shall read as follows: Section 1021f. The commissioner, his deputy, the factory inspector and the assistant factory inspector may enter any factory, mercantile establishment or workshop in which laborers or women are employed, for the purpose of obtaining facts and statistics, examining the means of escape therefrom in case of fire and the provisions made for the health and safety of operatives or for suitable seats for women therein. If any such officers shall learn of any violation of or neglect to comply with the law in respect to the employment of children, the hours of labor for them or for women, or in reference to fire escapes or the safety of employees, or such seats for women, he shall give written notice to the owner or occupant of such factory, mercantile establishment or workshop, of such offense or neglect, and if the same is not remedied within thirty days after the service of such notice, such officer shall give the district attorney of the county in which such factory, mercantile establishment or work-shop is situated, formal notice of the

facts, whereupon that officer shall immediately institute the proper proceedings against the person guilty of such offense or neglect.

Section 2. This act shall take effect and be in force, from and after its passage and publication.

FIRE-ESCAPES IN HOTELS, ETC.

Section 1021*g*. Any such officers may examine hotels and lodging or boarding houses for the purpose of discovering whether they are properly equipped with fire-escapes, and may post in any such building so examined the laws relating to such escapes together with his official statement as to whether said laws are fully complied with by the keeper thereof; and any such keeper or other person who shall mutilate, destroy or remove from any building or buildings the said laws or statement so posted shall be fined fifty dollars for each and every offense. Whenever any hotel, lodging or boarding house posted as not complying with such laws shall be properly provided and equipped with fire-escapes and the bureau shall be notified thereof the commissioner shall at once order a new statement, setting forth that fact, to be posted therein, and he shall keep a record of all buildings so examined and posted.

EMPLOYEES, PROTECTION OF; SPEAKING TUBES, ETC.; DISREGARD OF ORDERS.

Section 1021*h*. Any officer of the bureau may post in any factory or workshop examined by him the laws relating to the employment of children therein, hours of labor, fire-escapes or other matters pertaining to the health and safety of artisans; any person who shall remove or mutilate such laws so posted shall be fined fifty dollars for each offense. Any such officer may order bull-wheels, fly-wheels, tumbling rods, elevator wells, stairways, shafting or dangerous machinery of any kind to be inclosed or otherwise guarded so as to protect workmen or others; and any person refusing to obey the written order of such officer to such effect shall be fined fifty dollars for each such refusal. It shall be the duty of such officers to examine freight and passenger elevators and to condemn those found to be defective and unsafe by serving written notice on the person for whom it is being operated or on his agent, or by posting such notice on the walls or cab of any elevator found to be in an unsafe condition; the owner of any elevator so condemned, or the person for whom it is being operated, shall, by continuing the use thereof without making such repairs as will place it in a safe condition, be liable, civilly and criminally, for any physical injury caused by such use, whether such injury results in the death of the person injured or not. It is also the duty of such officers, when in their

judgment it may be found necessary, to see that in every manufacturing establishment, the machinery in which is propelled by steam power, communication, by means of speaking tubes or electric bells, shall be provided between each room in which machinery so operated is placed and the room in which the engineer is stationed. Any person occupying as owner, lessee or manager any manufacturing establishment where machinery so operated is used, or controlling the use of any building or room in which machinery propelled by steam is used, who shall fail to provide such means of communication shall be fined not less than ten dollars nor more than fifty dollars; but no prosecution shall be commenced for such violation until thirty days after written notice has been given by one of the officers designated in this chapter to such person of the changes necessary to be made to comply with the provisions hereof, nor then, if, in the meantime, changes have been made in accordance with such notice.

FACTORY, REFUSING ADMITTANCE TO; FAILURE TO MAKE RETURNS.

Section 1021i. The said commissioner shall have power to prescribe blank forms and transmit them to employers, which shall be filled out clearly and completely, under oath, by the persons to whom they are sent, with the facts, statistics and statements asked for, and returned to him within such reasonable time as he may fix. In case any owner or occupant or his agent shall refuse to admit any officer of the said bureau to his work-shop or factory he shall forfeit the sum of ten dollars for each and every offense, and if he shall, through his agent or otherwise, neglect, fail or refuse to fill out the said blank forms and verify and return them as required, he shall forfeit the sum of ten dollars for each and every day the said blank may be so delayed beyond the time fixed by the commissioner for their return. The fines authorized by this chapter shall be sued for in the name of the state by the district attorney of the proper county upon complaint of any officer of said bureau or any citizen, and shall be paid into the school fund.

SEAL; OATHS; WITNESS' FEES.

Section 1021j. There shall be provided a seal of office for the use of the bureau, and the commissioner or his deputy, for the purpose of making any investigation contemplated by this act, shall have power to administer oaths, take testimony and subpoena witnesses, which witnesses shall receive the same fees as are allowed to persons testifying in circuit courts, to be paid out of the state treasury on the certificate of the commissioner or his deputy; provided, however, that

no person subpoenaed by the said commissioner or his deputy shall be compelled to go outside of the city or town in which he resides to testify in behalf of such investigation.

REPORT OF COMMISSIONER OF LABOR.

Section 1021*k*. The commissioner shall make a report to the governor within ten days after the expiration of the biennial fiscal term, which report shall be printed and bound as provided by law.

DISTRICT ATTORNEY, DUTY OF.

Section 1021*l*. Whenever any officer of the bureau of labor and industrial statistics shall give written notice to any district attorney that any hotel, factory, public building or any other structure in his county is being used without fire escapes, watchmen or other means of safety prescribed by law, including means of communication between the rooms of manufacturing establishments as prescribed in section 1021*h*, such district attorney shall at once institute the proper proceeding against the offender, and without the aid or presence of any such officer do all that may be necessary to secure a determination of the guilt or innocence of the person complained of; and in case such district attorney shall refuse or neglect so to do any officer of such bureau may file charges against him and demand his removal from office.

CHAPTER 52.

SUPERVISORS' DUTIES.

Section 1223. * * * It shall be the duty of each board of supervisors:

* * * * * * * * *

2. To procure machinery, implements, stone, gravel and other material, and hire such machinery, laborers and animals as may be required to make and repair highways and bridges; * * *

LABOR. CREDIT FOR EXCESS OF.

Section 1234. If in any town in which the highway taxes are payable in labor any person shall expend, for the putting of highways in repair, in labor, * * * any amount greater than he is assessed to pay on the highway in such year he shall be entitled to receive from the superintendent a certificate for the amount of such expenditure above his highway tax, which shall be a good credit and shall be allowed to the holder thereof on account of any subsequent highway tax assessed in such town.

LABOR. PAYMENT OF TAX IN.

Section 1247. Every superintendent of highways in whose town highway taxes are payable in labor shall give at least three days' notice to each person residing in his town or district assessed to pay highway taxes therein, either personal or in writing left at his usual place of abode, of the time when and place where he may appear and pay his highway taxes in labor and with what implements; and he may require of all persons offering to pay their taxes in labor to furnish a spade, shovel, ax or hoe, and if any such person be the owner of a team, plow, wagon, cart or other implement useful for working the highways he may require such person to furnish any of them if his highway taxes be not less than three dollars.

LABOR. CREDIT FOR.

Section 1248. Every person assessed to pay highway taxes in such town may appear at the time and place and with such implements and teams as the superintendent of highways in his notice shall have required, and work in person or by an able-bodied substitute; and every such person who shall so appear and work agreeably to the direction of such superintendent upon the highways in his district shall be credited on his highway tax one dollar and fifty cents for every day he shall actually work eight hours, and fifty cents a day for every wagon or plow, and one dollar a day for each yoke of oxen and one dollar and fifty cents a day for each span of horses he shall furnish agreeably to the requirements of said superintendent.

LABOR. REMOVAL OF SNOW; CREDIT FOR.

Section 1249. Every superintendent of highways shall, whenever any part of any public highway in his district is blocked by snow so as to be impassable, call out, upon one day's notice, so many of the tax-payers therein as may be necessary to immediately put such part of said highway in passable order; and every person who shall appear upon such notice, with such animals and tools as the superintendent shall direct and work agreeably to his orders, and shall expend in labor * * * an amount greater than he is assessed to pay as highway taxes in such year, shall be entitled to receive from the superintendent a certificate for the amount of such expenditure which, in towns permitting the payment of such taxes in labor, shall be allowed to the holder thereof on account of any delinquent or subsequent highway tax assessed against him in such town, and in towns in which highway taxes are payable in money such certificate on presentation to the treasurer of the town in which such expenditure was made, shall be a good credit on account of any delinquent or subsequent highway tax assessed such person therein,

DRAINS, CONTRACT FOR WORK.

Section 1379-23. In all cases where the work to be done at any one time under the direction of the commissioners shall, in their opinion, cost to exceed five hundred dollars the same shall be let to the lowest responsible bidder, and the commissioners shall advertise for sealed bids by notice published in some newspaper published in the county in which the petition is filed; if there be no newspaper published therein, then in some newspaper published in an adjoining county, which said notice shall particularly set forth the time and place when and where the bids advertised for will be opened, the kind of work to be let and the terms of payment. Said commissioners may continue the letting from time to time, if in their judgment the same shall be necessary, and may reserve the right to reject any and all bids; and they shall not, during their term of office, be interested, directly or indirectly, in any contract for the construction of any ditch, drain or levee in such drainage district nor in the wages of or the supplies for men or teams employed on any such work in said district.

CHAPTER 63.

MINORS MAY BE BOUND OUT.

Section 1511. When any minor shall become or be likely to become chargeable to any town, either because of being an orphan or because the parents or other relations are unable or refuse to support such minor, the supervisors of such town shall bind such minor as an apprentice to some respectable householder of the county by written indenture, which shall bind such minor to serve as an apprentice, and shall be executed in like manner and shall be of the same tenor and effect as indentures executed pursuant to chapter 110; and every minor so bound, and the supervisors binding him, and his master, shall be subject to all the provisions of said chapter.

CHAPTER 67.

PEDDLERS. LICENSE, WHO MUST HAVE.

Section 1570. No person shall be allowed to travel from town to town, from house to house, or from place to place in any town (the word "town" as used in this section shall include cities and villages) for the purpose of selling or exposing for sale, barter or exchange, at retail or to consumers, any goods, wares, merchandise, notions or other articles of trade whatsoever, whether by sample or otherwise, and

whether any of said articles of trade are delivered at the time of sale or are to be delivered at some future day, unless he shall have obtained a license as a peddler as herein provided; but this chapter shall not prevent any manufacturer, mechanic, nurseryman or farmer from selling his work or production by himself or employee; provided, that such manufacturer or mechanic shall have actually manufactured the goods, and such nurseryman shall have actually raised the products so sold or offered for sale, or shall have owned or been in possession of the same for not less than three months next prior to said sale or offering for sale; or any patent-right dealer from selling his own invention; or any person from selling or offering to sell at wholesale or to dealers only any goods, wares or merchandise whatsoever, or any fish peddlers from selling fish, or train boys from selling to persons traveling on railroad train; or any person who is blind, or deaf and dumb, or so crippled as to incapacitate him for manual labor, from selling goods, ware or merchandise on foot or with one horse and wagon or bicycle, without a license; provided, that this section shall not be construed to require any keeper of a meat market or dealer in agriculture machinery or farm implements, who keeps a permanent place of business, or his employees, to procure a license to sell such meats, machinery or implements as are kept in stock by him at such place; nor shall it apply to the soliciting of orders for the sale or to the offering for sale, by sample or otherwise, of any goods, wares, merchandise, notions or other articles of trade which are without the state at the time and are thereafter to be shipped or sent direct to the person so ordering or purchasing such articles, nor to the doing of any act which shall interfere with interstate commerce; but it does apply to all persons required to obtain licenses as peddlers, all who are transient merchants, traders or dealers, such as bring into any town, city or village any articles of trade, other than such as are excepted herein, for the purpose of selling the same in the manner provided in this section and who do not intend to become and do not become permanent merchants, traders or dealers in such town, city or village; permanent merchants, traders and dealers being here defined to be those who remain in a locality engaged in trade for a period of six months or more continuously or who pay taxes upon their goods, wares, merchandise or other articles of trade in the town, city or village in which they are offered for sale as dealers resident there pay taxes.

Validity.—In *in re Mitchell*, 62 Fed. Rep., 576, Judge Seaman held that persons employed by a dealer in various articles of merchandise who resided in Minnesota and had his place of business there and who were engaged in soliciting orders in this state for their employer's goods to be delivered thereafter, and having only samples of such with them, were in the exercise of interstate commerce, and that their imprisonment because they failed to obtain licenses was void.

PEDDLERS. APPLICATION.

Section 1571. Every person desiring to be so licensed shall make a written application signed by himself or his agent, to the secretary of state wherein he shall state in what manner he intends to travel and trade, whether on foot or with one or more horses or other beasts of burden, and whether he intends to sell by sample, taking orders for future delivery, or to trade as a transient merchant or dealer.

PEDDLERS. FEES; LOCAL LICENSE, ETC.

Section 1572. Every such applicant, before he shall be entitled to such license, shall pay into the state treasury the following license fees: If he intends to travel by bicycle or on foot, including railroads and other public conveyances, but carrying his goods, wares and merchandise with him, thirty dollars; if he intends to travel and carry his goods with a single horse or other beast carrying or drawing a burden, forty-five dollars; if he intends to travel with a vehicle drawn with two or more horses or other animals, seventy-five dollars; if intending to deal as a transient merchant, trader or dealer, fifty dollars; provided, that any such applicant taking license as such transient merchant, trader or dealer shall, in addition to such amount, also pay to the treasurer of the town, city or village where he may sell or offer for sale any goods, wares or merchandise not exceeding fifty dollars for each day that he may be engaged in selling or disposing of the same, to be determined by ordinance or resolution of such town, city or village, which ordinance or resolution shall provide when and in what manner such tax shall be paid; and provided further, that any peddler on entering any city, village or town for the purpose of selling or offering for sale his goods, wares or merchandise shall, if required by any treasury agent or any official of any such city, village or town, appear before the clerk thereof, exhibit his state license and make affidavit that he is the person named in such license. After making such affidavit such clerk shall issue a certificate, setting forth that the above requirement has been complied with for such city, village or town, which certificate shall be good for thirty days from its date. Any peddler failing to comply with the above requirement shall be punished by fine not exceeding ten dollars or by imprisonment in the county jail ten days, or by both such fine and imprisonment.

PEDDLERS. PENALTIES; FEES TO WITNESSES, ETC.; EVIDENCE.

*Section 1576. Every person who shall be found traveling or trading contrary to the provisions of this chapter or to the terms of any li-

*This section was amended by sec. 1, ch. 52, laws of 1899, by inserting the words in parenthesis.

cense that may have been granted to him, or shall when licensed as a transient merchant, trader or dealer neglect or refuse to pay the per diem tax authorized by section 1572, according to the ordinance or resolution of the town, city or village passing the same, shall, for each offense forfeit not less than fifty dollars nor more than one hundred dollars, which the district attorney of the proper county shall sue for in the name of the state and cause to be collected and paid into the state treasury for the benefit of the school fund. The court imposing such forfeiture may order that there be paid to the district attorney out of the sum collected in the action prosecuted by him a sum not exceeding fifteen per centum thereof, and to the witnesses or other persons furnishing information of the violation of law a sum not exceeding ten per centum of the amount collected; provided, that if any person shall be engaged in trade in any town, city or village, contrary to the provisions of this chapter respecting transient merchants, traders or dealers, nothing herein contained shall prevent such town, city or village from suing for and collecting the amount of the per diem tax imposed upon such person for the use of such town, city or village, according to the provisions of chapter 142, and in addition thereto a forfeiture of a sum equal to the amount of such tax. Upon the trial of any such action the fact that such person has not been engaged in trade in the plaintiff town, city or village for the space of six months or has not paid any tax therein upon his goods, wares and merchandise as resident dealers have done, shall be prima facie evidence that he is a transient merchant, trader or dealer and that he is liable to such per diem tax if it has not been paid. Every person (having a license under the provisions of this chapter as a peddler or transient merchant, trader or) dealer who shall refuse to produce it for examination when lawfully required to do so by the treasury agent or any special treasury agent, or "any sheriff, undersheriff, deputy sheriff, policeman, marshal, constable or any peace officer" of any town, city or village shall be punished by a fine of not more than twenty dollars or by imprisonment in the county jail not more than twenty days, or by both such fine and imprisonment; "and any failure to produce such license when required by such officers shall be prima facie evidence that no such license has been obtained."

PEDDLERS. LICENSE OF, BY LOCAL AUTHORITIES.

Section 1584a. The supervisors of the several towns in this state containing villages not incorporated and trustees of incorporated villages are hereby authorized and shall have power to establish rates for and license and regulate the traffic of all peddlers endeavoring to procure the sale of goods, boots and shoes, clothing, and wares of whatever description (farmers' produce excepted), by putting up booths or stalls or stopping with their vehicles or other conveyances

in any of the streets, alleys, public squares or vacant lots within and near the limits of any said villages, which shall be designated and determined by said supervisors or trustees, as the case may be, during any days of public assemblages held therein, such as county or monthly cattle fairs, election or town meeting days, not to exceed twenty days in any year.

PEDDLERS. LICENSE, TERM OF; HOW ISSUED.

Section 1584b. The license or permit provided for in the preceding section shall be good only for the day or days designated therein, and may be issued by the town or village clerk, as the case may be, by and under the direction and regulations of the supervisors of such towns or the trustees of such incorporated villages as may have adopted the same under the preceding section.

PEDDLERS. PENALTIES.

Section 1584c. The provisions of and the penalties prescribed in sections 1576 and 4573 shall also apply to any and all persons selling goods and wares as before mentioned contrary to the provisions of the two preceding sections, whenever the supervisors of any town or the trustees of any incorporated village have adopted the system provided for herein by resolution or otherwise; provided always, that the provisions of this and the two preceding sections shall in no way affect existing laws regulating agricultural societies.

CHAPTER 68.

AUCTIONEERS. SELLING WITHOUT LICENSE.

Section 1586. No person shall, without the limits of an incorporated city or village, exercise the business of an auctioneer by selling any goods, wares and merchandise at any sale at which the highest bidder is deemed the purchaser, except in cases where no duty is payable therefor under the provisions of this chapter, unless such person shall have a license then in force authorizing the same from the town clerk of the town in which such sale is made; and for every violation hereof the person offending shall forfeit one hundred dollars and pay to the town all the duties required to be paid by this chapter.

AUCTIONEERS. LICENSE; BOND, FEE.

Section 1587. The several town clerks may grant, under their hands, license to exercise the business of auctioneer within their respective towns and without the limits of any incorporated city or village for any term, not exceeding one year from the date thereof, to any inhab-

itant of the state who shall apply for the same; provided, that the applicant shall first file with such clerk a bond to the town in the sum of two hundred and fifty dollars, with surety to be approved by the county judge or chairman of the town, conditioned that such applicant, being licensed, shall duly pay to the town treasurer all the duties imposed by this chapter and render to the town clerk an account in writing, as required by section 1588, within twenty-four hours after the close of any sale at auction for which any duty shall be payable. The clerk shall be entitled to receive from such applicant one dollar as fees for every such license.

License not compelled by mandamus.—Under a statute granting the mayor of a city authority to issue licenses to any person engaged in and carrying on the business and occupation of an auctioneer or desiring to be so engaged, on such person filing a bond with two good sureties, the exercise of the mayor's discretion is not subject to revision or control and mandamus will not issue to compel him to license one who has filed the bond. *People v. Grant*, 126 N. Y., 473.

AUCTIONEERS. REPORT.

Section 1588. Every auctioneer shall, within the time mentioned in the preceding section, render to the town clerk a particular account in writing, verified by his affidavit, of the gross amount for which any goods, wares or merchandise liable to duty have been sold by him and of the amount of such duty paid to the town treasurer.

AUCTIONEERS. AUTHORITIES OF CITIES AND VILLAGES.

Section 1590. The common council of any city and the board of trustees of any village may regulate uniformly, by ordinances, the sale by auction, within the meaning of this chapter, of goods, wares and merchandise or other property within their respective cities or villages; and thereby may prohibit, under proper fines or penalties, any sales at auction therein by any person without license, require daily reports of any sales made, verified by affidavits, to be made by every auctioneer to the clerk of such city or village, require sufficient bonds from the licensee for compliance with any such ordinance, and the payment of a license fee of not less than ten nor more than twenty-five dollars per day, or when fixed by the year not less than ten nor more than three hundred dollars per year, in addition to any percentage they may fix, which shall not be less than ten nor more than twenty per centum upon the gross amount of sales made; but they shall not require the payment of any per diem or percentage in the cases excepted in section 1585.

CHAPTER 69.

DRUNKEN DRIVERS, EMPLOYMENT OF.

Section 1592. No person owning or having the direction or control of any coach or other vehicle running or traveling upon any road in this state for the conveyance of passengers shall employ or continue in employment any person to drive such coach or other vehicle who is addicted to drunkenness or to the excessive use of intoxicating liquors; and if any such person shall violate the provisions of this section he shall forfeit five dollars per day for all the time during which he shall have kept such driver in such employment.

DRUNKEN DRIVERS. THEIR DISCHARGE.

Section 1593. If any driver, while actually employed in driving such coach or vehicle, shall be guilty of intoxication the owner or person having the charge of such coach or other vehicle shall, on receiving written notice of the fact, signed and sworn to by any passenger who witnessed the same, forthwith discharge such driver from such employment; and every person who shall retain or have in such service, within six months after the receipt of such notice, any driver who shall have been so intoxicated shall forfeit five dollars per day for all the time during which he shall keep any such driver in such employment after receiving such notice.

DRIVERS. LEAVING ANIMALS UNFASTENED.

Section 1594. It shall not be lawful for the driver of any carriage or other vehicle used for the conveyance of passengers for hire to leave the horses or other animals attached thereto, while any passenger remains in or upon the same, without making such horses fast with a sufficient halter, rope or chain or without some suitable person to take the charge and guidance of them so as to prevent their running; and if any such driver shall violate the provisions of this section he and his employer, jointly and severally, shall forfeit a sum not exceeding twenty dollars; but no prosecution shall be commenced therefor after the expiration of three months from the time of committing the offense.

DRIVERS. LIABILITY FOR ACTS OF.

Section 1595. The owners of every carriage or other vehicle, running or traveling upon any road or public highway for the conveyance of passengers for hire, shall be liable, jointly and severally, to the party injured for all injuries and damages done by any person in the em-

ployment of such owners as a driver, while driving such carriage, to any person or to the property of any person, whether the act occasioning such injury or damage be wilful, negligent or otherwise, in the same manner as such driver would be liable.

CHAPTER 73a.

FIRE-ESCAPES ON BUILDINGS.

Section 1636cc. Every inn, hotel, boarding-house, store-house, or tenement building more than two stories high and containing, above the ground floor, sleeping apartments, offices, an assembly hall, work rooms or a room intended to be used as a place of amusement, all or any of which rooms are designed for occupancy by twenty-five or more persons, shall be provided with one or more fire-proof stairways or ladders on the outside thereof, placed in such position and as many in number as may be designated by the chief of the fire department or fire marshal of the village or city in which the building is located, or by the state factory inspector. If more than one stairway or ladder are required, each side of such inn, hotel, boarding-house, store-house or tenement building shall be provided therewith. Such stairways or ladders shall connect the cornice with the top of the first story of any such building by a wrought-iron platform, balcony, piazza, or other safe and convenient resting place on a level with the floor of each story so connected, and of sufficient length to permit access to the same from not less than two windows in each story; they shall be convenient of access from the interior of the building, commodious in size and form and of sufficient strength to be safe for the purpose of ascent and descent. In cities and villages where there is a water supply for fire purposes there shall be attached to such stairs or ladders a three-inch wrought-iron stand-pipe extending from a point within five feet of the ground to a point three feet above the roof or cornice; at each story above the first and on the roof there shall be attached a two and one-half inch angle hose valve with male hose connection, and a double or siamese "Y" female hose connection at the base of the pipe, with threads to conform to the size and pattern used by the fire department where the building is located. Neither this nor the next following sections shall apply to any private dwelling, nor to any building erected on or before the third day of May, 1895, and which is supplied with a reasonable fire escape or escapes.

ELEVATOR WALLS.

Section 1636f. The inside walls or casings of every elevator used for the conveyance of passengers to and from the upper stories of any such building as is within the preceding section shall be constructed of fire-proof material throughout.

WATCHMAN; NOTICE OF MEANS OF EXIT.

Section 1636g. In all such buildings as are described in section 1636ee which contain one hundred rooms or more, not less than one efficient watchman shall be on duty from 10 o'clock p. m. until 5 o'clock a. m. during each and every night that any such building is occupied. There shall be posted in every room in every building within said section, in legible print, a brief and accurate statement of all the means of safety and escape therefrom in case of fire, and a red light shall be kept burning all night at the head of each stairway above the first floor, also on each floor above the first, at or near the exit to such fire-proof stairway or ladder.

ENFORCEMENT OF LAW.

Section 1636h. It shall be the duty of the chief or marshal of the fire department of every village or city to enforce the provisions of the foregoing sections, and of the state factory inspector to enforce them in towns, villages and cities where there is no such chief or marshal. Any person who shall fail to comply with the provisions of said sections within ninety days after being notified in writing to do so by either of said officers whose duty it may be to give notice shall be punished according to law. Said chief, marshal or inspector, upon receiving notice or obtaining knowledge that any person within his jurisdiction has not so complied with said provisions, shall file a written statement to that effect with the proper district attorney, which, being done, he shall prosecute such person.

PENALTY.

Section 1636i. The owner, tenant or other person in charge of any building within either of the four next preceding sections who shall fail or neglect, after written notice has been given him in accordance with the next preceding section, to comply with any of the provisions of said sections which are applicable to the building owned, leased or in his charge shall be punished by a fine not exceeding one thousand dollars or by imprisonment in the county jail not longer than ninety days.

**EMPLOYES; OVERCROWDING; SAFEGUARDS FOR MACHINERY,
ETC.**

Section 1636j. No person or corporation shall employ and put to work in any factory, workshop or other place where labor is performed, or in any part of any such place, a larger number of persons than can be kept at work there without doing violence to the laws of health. The local board of health shall have power to determine any

question arising under this provision, and its written determination shall be conclusive upon all parties to any action or proceeding under the same. The owner or manager of every place where persons are employed to perform labor shall surround every stationary vat, pan or other vessel into which molten metal or hot liquids are poured or kept with proper safeguards for the protection of his employes, and all belting, shafting, gearing, hoists, fly-wheels, elevators and drums therein which are so located as to be dangerous to employes in the discharge of their duty shall be securely guarded or fenced. Any person or corporation which shall neglect for thirty days after the receipt of written notice from the state factory inspector to provide a suitable place for the persons employed by him to work in or who shall fail to make and maintain such safeguards as this section requires and as said inspector shall specify, shall forfeit not to exceed twenty-five dollars for each offense, and every day's neglect or failure, after a conviction hereunder, shall constitute a separate offense.

Scope of statute.—In answer to the contention of counsel that the provision requiring the covering of gearing does not apply to an employee who is engaged in working upon the gears, but only to employees who perform other duties and are not employed directly upon or about them, the court said that such a view was too narrow, and to hold it would go far to nullify the purpose of the statute. *Thompson v. Edward P. Allis Co.*, 89 Wis., 523.

CHAPTER 75.

MINING. RULES GOVERNING RIGHTS OF.

Section 1647. Where there is no contract between the parties or term established by the landlord to the contrary the following rules and regulations shall be applied to mining contracts and leases for the digging of ores and minerals, viz.:

1. No license or lease, verbal or written, made to a miner shall be revocable by the maker thereof after a valuable discovery or prospect has been struck unless the miner shall forfeit his right by negligence such as establishes a forfeiture according to mining usages.

2. The discovery of a crevice or range containing ores or minerals shall entitle the discoverer to the ores or minerals pertaining thereto, subject to the rent due his landlord, before as well as after the ores or minerals are separated from the freehold; but such miner shall not be entitled to recover any ores or minerals or the value thereof from the person digging on his range in good faith and known to be mining thereon until he shall have given notice of his claim; and he shall be entitled to the ores or minerals dug after such notice.

3. Usages and customs among miners may be proved in explanation

of mining contracts to the same extent as usage may be proved in other branches of business.

Revocation of license.—A license to mine upon lands is irrevocable after a valuable discovery or prospect has been struck by the licensee, though actual entry has not been made under the license. *Tipping v. Robbins*, 64 Wis., 546. But that provision does not apply where license has been granted by only one of several joint owners of land. *Tipping v. Robbins*, 71 Wis., 507.

Validity of lease.—Rights of lessees. The lessees under an oral agreement giving them the exclusive right to mine upon certain land acquire sufficient interest therein to maintain an action of trespass against third persons for mining thereon; and the defendant must account for the value of the ore so taken: *Ganter v. Atkinson*, 35 Wis., 48.

It will not be assumed that such oral lease was for more than one year. If the lessees continue to work the land after the expiration of a year they would be regarded, in an action against third persons for trespass, as tenants from year to year. *Ibid.*

MINING. CONFLICTING CLAIMS.

Section 1648. In case of conflicting claims to a crevice or range bearing ores or minerals the court may continue any action to enforce a claim or grant any necessary time for the purpose of allowing parties to prove up their mines or diggings if it shall be made satisfactorily to appear necessary to the ends of justice; and in such case the court or judge in term or vacation may appoint a receiver and provide that the mines or diggings shall be worked under the receiver's direction, subject to the order of the court, in such manner as will best tend to ascertain the respective rights of the parties; and the ores or minerals raised by either party pending the dispute shall be delivered to the receiver, who may, by order of the court or judge, pay any rent or other necessary expenses therefrom.

LESSEE'S FRAUD; FAILURE TO WORK MINE.

Section 1649. Any miner who shall conceal or dispose of any ores or minerals or mines or diggings for the purpose of defrauding his lessor of his rent or who shall neglect to pay any rent on ores or minerals raised by him for three days after the notice thereof and claim of such rent, shall forfeit all right to his mines, diggings or range; and his landlord after such concealment or after three days have expired from the time of demanding rent, may proceed against him to recover possession of the mines or diggings before a justice of the peace as in the case of a tenant holding over after the termination of his lease as provided by these statutes; and in case a miner shall neglect to work his mines or diggings according to the usages of miners, without reasonable excuse, he shall likewise forfeit his mines or diggings and his landlord may proceed against him in like manner to recover possession of the same.

CHAPTER 80.

VOLUNTARY ASSIGNMENTS. PAYMENT OF LABORERS, ETC.

Section 1700. * * * Before making any dividend the assignee shall pay * * * the compensation due all laborers, servants and employees for labor or personal services performed for the assignor within the six months next preceding the making of the assignment, the claims for which shall be paid by him next after the payment of unpaid taxes and assessments, debts due the United States or this state, the expenses of the assignment and the execution of the trust.

Servants, clerks or laborers.—"All debt owing for labor do not include the claim of a contractor who engages to perform work for a gross sum and who employs a force of men and teams, the contract price including the profits which he has made and being inseparably comingled with the value of his and his employees' labor." *In re petition of Clark*, 92 Mich., 351.

It has been held that one who renders such services as are usually required of a head miller is within the language quoted. *Black appeal*, 83 Mich., 513. But a lumber inspector who determines the grades of lumber and logs, and who is employed jointly by their buyer and seller, is not. "What is compensated is not the labor, but the judgment and integrity of the inspector." *In re petition of Sayles & Co.*, 92 Mich., 354.

CHAPTER 80a.

LABELS AND TRADE-MARKS.

Section 1747a. Any person, association or union of workmen which has heretofore adopted or used or shall hereafter adopt or use any label, trade-mark, term, design, device or form of advertisement for the purpose of designating, making known or distinguishing any goods, wares, merchandise or other product of labor as having been made, manufactured, produced, prepared, packed or put on sale by such person, association or union or by a member or members thereof may file the same for record in the office of the secretary of state by leaving two copies, counterparts or fac similes thereof, with said secretary and by filing therewith a sworn statement specifying the name of the person, association or union on whose behalf such label, trade-mark, design, device or form of advertisement is to be filed, the class of merchandise and a separate description of the goods to which the same has been or is intended to be appropriated, that the party on whose behalf such label, trade-mark, term, design, device or form of advertisement is to be filed has the right to the use of the same, and that no other person, firm, association, union or corporation has such right either in the identical form or in any such near resemblance thereto as may be calculated to deceive, and that the copies, counter-

parts or fac similes filed therewith are correct. The papers so required to be filed shall be recorded in a book kept for that purpose, and there shall be paid the secretary of state for such recording and filing one dollar.

Validity.—A statute protecting trade-marks adopted by associations or unions of workmen is not void as class legislation or because it grants special privileges or immunities. *State v. Bishop*, 128 Mo., 373; *Cohn v. People*, 149 Ill., 486.

CERTIFICATES OF FILING; EVIDENCE.

Section 1747b. Said secretary shall deliver to the person, association or union so filing or causing to be filed any such label, trade-mark, term, design, device or form of advertisement so many duly attested certificates of the filing and recording of the same as may be desired and shall receive for each such certificate a fee of one dollar. Any such certificate shall, in all suits and prosecutions arising out of or depending upon any rights claimed under such label, trade-mark, term, design, device or form of advertisement be sufficient thereof. The secretary of state shall record any label, trade-mark, term, design, device or form of advertisement that may reasonably be mistaken for anything theretofore filed in his office under the provisions of this chapter.

FRAUDULENT FILING; DAMAGES.

Section 1747c. Any person who shall for himself or on behalf of any other person, association or union procure the filing of any label, trade-mark, term, design, device or form of advertisement under the provisions of the preceding section by making any false or fraudulent representations or declarations, verbally or in writing, or by any other fraudulent means shall be liable for any damages sustained in consequence thereof, to be recovered by or on behalf of the party injured thereby, and shall also be punished as provided by law.

TRUSTS, ETC. UNLAWFUL CONTRACTS, CONSPIRACIES.

Section 1747c. Every contract or combination in the nature of a trust or conspiracy in restraint of trade or commerce is hereby declared illegal. Every person who shall combine or conspire with any other person to monopolize or attempt to monopolize any part of the trade or commerce in this state shall forfeit for each such offense not less than fifty dollars nor more than three thousand dollars. Any such person shall also be liable to any person transacting or doing business in this state for all damages he may sustain by reason of the doing of anything forbidden by this section.

TRUSTS, ETC. LABOR UNIONS NOT INCLUDED.

Section 1747h. The word person wherever used in the three next preceding sections shall be deemed to include, besides individuals, corporations, partnerships and associations existing under or authorized by the laws of the United States, any of the territories of this or any other state or of any foreign country; provided, that nothing therein shall be construed to affect labor unions or any other association of laborers organized for the purpose of promoting the welfare of its members, nor associations or organizations intended to legitimately promote the interests of trade, commerce or manufacturing in this state.

CHAPTER 83.

WOMEN AND CHILDREN, HOURS OF LABOR OF.

Section 1728. In all manufactories, workshops and other places used for mechanical or manufacturing purposes the time of labor of children under the age of eighteen years and of women employed therein shall not exceed eight hours in one day; and any employer, stockholder, director, officer, overseer, clerk or foreman who shall compel any woman or any such child to labor exceeding eight hours in any one day, or who shall permit any child under fourteen years of age to labor more than ten hours in any one day in any such place, if he shall have control over such child sufficient to prevent it, or who shall employ at manual labor any child under twelve years of age in any factory or workshop where more than three persons are employed, or who shall employ any child of twelve and under fourteen years of age in any such factory or workshop for more than seven months in any one year shall be punished by fine not less than five nor more than fifty dollars for each such offense.

Negligence of employer.—The mere employment of a child under the prescribed age and his presence in a factory do not constitute actionable negligence on the part of his employer. *Kutchera v. Goodwillie*, 93 Wis., 448.

CHAPTER 274, LAWS OF 1899.

An act to regulate the employment of minors in the state of Wisconsin.

Section 1. No child under fourteen years of age shall be employed at any time in any factory or workshop or in or about any mine. No such child shall be employed in any mercantile establishment, laundry or in the telegraph, telephone or public messenger service, except during the vacation of the public schools in the town, district or city where such child is employed.

Section 2. It shall be the duty of every person, firm or corporation, agent or manager of any firm or corporation employing minors in any mercantile establishment, store, office, laundry, manufacturing establishment, factory or workshop or in the telegraph, telephone or public messenger service within this state to keep a register in said mercantile establishment, store, office, laundry, manufacturing establishment, factory or workshop in which said minors shall be employed or permitted or suffered to work, in which register shall be recorded the name, age, date of birth, place of residence of every child employed or permitted or suffered to work therein under the age of sixteen years and it shall be unlawful for any person, firm or corporation, agent or manager of any firm or corporation to hire or employ or to permit or suffer to work in any mercantile establishment, store, office, laundry, manufacturing establishment, factory or workshop, telegraph, telephone or public messenger service any child under the age of sixteen years unless there is first provided and placed on file in such mercantile establishment, store, office, laundry, manufacturing establishment, factory or workshop an affidavit made by the parent stating the name, date and place of birth and name and place of the school attended of such child. If such child have no parent or guardian, then such affidavit shall be made by the child, and the register and affidavits herein provided for shall, on demand, be produced and shown for inspection to the factory inspector, assistant factory inspectors or any officer of the bureau of labor and industrial statistics.

Section 3. No person under the age of sixteen years shall be employed, required, permitted or suffered to work for wages at any gainful occupation longer than ten hours in any one day, nor more than six days in any one week, nor after the hour of nine at night nor before the hour of six in the morning.

Section 4. It shall be the duty of the commissioner of labor, the factory or assistant factory inspectors to enforce the provisions of this act, and to prosecute violations of the same before any court of competent jurisdiction in this state. It shall be the duty of the said commissioner of labor or the factory or assistant factory inspectors, and they are hereby authorized and empowered to visit and inspect, at all reasonable times, and as often as possible, all places covered by this act.

Section 5. The commissioner of labor, the factory or assistant factory inspectors shall have the power to demand a certificate of physical fitness, from some regularly licensed physician, in the case of children who may seem physically unable to perform the labor at which they may be employed, and no minor shall be employed who cannot obtain such a certificate.

Section 6. Whenever it appears upon due examination that the labor of any minor over twelve years of age, who would be debarred from employment under the provisions of section one of this act is necessary

for the support of the family to which said child belongs or for its own support, the county judge of the county where said child resides, the commissioner of labor or any factory or assistant factory inspector may in the exercise of their discretion issue, free of charge, a permit or excuse authorizing the employment of such minor within such time or times as they may fix.

Section 7. No firm, person or corporation shall employ or permit any child under sixteen years of age to have the care, custody, management or operation of any elevator.

Section 8. The words "manufacturing establishment," "factory" or "workshop" as used in this act, shall be construed to mean any place where goods or products are manufactured or repaired, dyed, cleaned or sorted, stored or packed, in whole or in part, for sale or for wages, and not for the personal use of the maker or his or her family or employer.

Section 9. Any person, firm or corporation, agent or manager of any corporation who, whether for himself or for such firm or corporation or by himself or through agents, servants or foremen, shall violate or fail to comply with any of the provisions of this act or shall hinder or delay the commissioner of labor, the factory or assistant factory inspectors or any or either of them in the performance of their duty or refuse to admit or shut or lock them out from any place required to be inspected by this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not less than ten dollars nor more than one hundred dollars for each offense. Any corporation which, by its agents, officers or servants, shall violate or fail to comply with any of the provisions of this act shall be liable to the above penalties, which may be recovered against such corporations in an action for debt or assumpsit brought before any court of competent jurisdiction in this state.

Section 10. Any parent or guardian who suffers or permits a child to be employed or suffered or permitted to work in violation of this act shall be guilty of a misdemeanor and upon conviction thereof, shall be fined not less than five nor more than twenty-five dollars.

Section 11. All acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

Section 12. This act shall take effect and be in force, on and after its passage and publication.

Effect of statute upon the relation of master and servant.—An Ohio statute prohibits the employment of boys under twelve years of age in such establishments as defendants operated. In a civil action brought to recover for an injury to a person under such age, sustained in the employment, the employer is not made liable by proof of the fact that he knew the person was within the prohibited age, if the illegal employment was not the direct and proximate cause of the injury. If the injuries complained of go beyond the employment and involve questions of negligence on part of the servant, the mere violation of the statute is not, in and of itself, enough to entitle the latter to recover. *Evans v. Am. I. & T. Co.*, Fed. Rep., 519.

CHAPTER 77, LAWS OF 1899.

FEMALES, SEATS FOR.

Section 1. Every person or corporation employing females in any manufacturing, mechanical or mercantile establishment in the state of Wisconsin shall provide suitable seats for the females so employed, and shall permit the use of such seats by them when they are not necessarily engaged in the active duties for which they are employed.

Section 2. Any person or corporation who shall violate the provisions of this act shall, upon conviction thereof, be considered guilty of a misdemeanor and shall be punished by a fine of not less than ten dollars, nor more than thirty dollars for each and every offence.

Section 3. This act shall take effect and be in force, from and after its passage and publication.

CHAPTER 330, LAWS OF 1899.

LABOR, EMPLOYMENT OF; PENALTIES.

Section 1. Any person or corporation engaged in manufacturing, which requires from persons in his or its employ, under penalty of forfeiture of a part of the wages earned by them, a notice of intention to leave such employ, shall be liable to the payment of a like forfeiture if he or it discharges, without similar notice, a person in such employ except for incapacity or misconduct, unless in case of a general suspension of labor in his or its shop or factory or in the department thereof wherein such employee is engaged.

Section 2. No person shall, by threatening to discharge a person from his employment or threatening to reduce the wages of a person or by promising to give employment at higher wages to a person, attempt to influence a qualified voter to give or withhold his vote at an election.

Section 3. No license shall be granted for a theatrical exhibition or public show in which children under fifteen years of age are employed as acrobats, contortionists or in any feats of gymnastics or equestrianism, when in the opinion of the board of officers authorized to grant license such children are employed in such manner as to corrupt their morals or impair their physical health.

Section 4. Any person who shall violate any of the provisions of this act shall, upon conviction, be fined in a sum not exceeding one hundred dollars.

Section 5. This act shall take effect and be in force from and after its passage and publication.

CHAPTER 221, LAWS OF 1899.

WAGES, PAYMENT OF IN TIME CHECKS, ETC.

Section 1. All corporations or individuals paying wages in time checks or other paper than legal money, shall make such time checks or paper payable in some designated place of business in the county in which the work was performed or at the office of such corporation or individual within the state of Wisconsin, or at any bank within said state.

Section 2. Any corporation or individual failing to comply with the terms of the above section shall upon conviction thereof be fined not to exceed one hundred dollars nor less than ten dollars.

Section 3. This act shall take effect and be in force from and after its passage and publication.

CHAPTER 213, LAWS OF 1899.

EMPLOYMENT OFFICES, ETC.

Section 1. No person shall engage in the business of keeping an employment or intelligence bureau or office or agency for the purpose of hiring men to work for others, and receive a compensation for such hiring without first having obtained a license so to do as hereinafter provided; any person or persons who shall establish or keep any office or place within said state, for the purpose of obtaining place or employment for laborers of any kind whatever, or for procuring or giving information concerning such places or employment to such laborers, or for procuring or giving information concerning such laborers to employers, shall be deemed a keeper of an employment or intelligence bureau, office or agency; and any person who shall engage in such business without such license, shall be guilty of a misdemeanor and shall upon conviction thereof be punished by a fine not exceeding one hundred dollars or imprisonment in the county jail not exceeding ninety days or both.

Section 2. Any person who desires to engage in any such business may apply to the common council if such business be carried on in a city, or to the village council if in a village, or to the county board of the county in which such business is to be carried on if in the country, for such license, and pay into the treasury of such city, village or county, the sum of ten dollars and upon executing and delivering to such common council, village council or county board a bond in the penal sum of one thousand dollars with sufficient sureties, or in lieu thereof a surety bond of one thousand dollars, to be approved by such

common council, village council or county board, he shall be entitled to such license. Each license shall designate the house in which the person licensed shall keep his office, giving street and number of the same, and the number of such license, and shall continue to be in force until the first day of May next ensuing the date thereof and no longer; provided always, that the foregoing license fee shall be the same for any length of time whether issued for a year on the first day of May, or any fractional part thereof; and no license issued hereunder shall be transferred to any other person or persons whatever or inure to the benefit of any other person than the licensee.

Section 3. The bonds shall run to the state of Wisconsin, and shall be conditioned for the payment of any damage that any person secured or engaged to labor for others by the obligor, may sustain by reason of any unauthorized act, fraud or misrepresentation on the part of such agent for such hiring. The bond shall be filed with the city clerk if approved by the common council, with the village recorder if approved by the village council, and with the county clerk if approved by the county board of any county. Any person licensed and having given bond as herein provided may, while continuing to reside or maintain his office at the place mentioned in such license, prosecute his said business in any part of the state.

Section 4. Every person hired or engaged to work for others by one so licensed as aforesaid, shall be furnished a written copy in duplicate of the terms of such hire or engagement, rate of wages or compensation, kind of service to be performed, length of time of such service, with full name and address of the person or persons, firm or corporation authorizing the hire of such person, one of the aforesaid copies to be delivered to the person or persons, firm or corporation for whom the contracted labor is to be performed, and the other to be retained by the person hired as aforesaid.

And any person hired or engaged to work for others by one so licensed as aforesaid, who shall fail to get employment according to the terms of such contract of hire or employment, by reason of any unauthorized act, fraud or misrepresentation on the part of such agent, may bring an action upon said bond, and may recover in such action against the principal and sureties the full amount of his damages sustained by reason of such unauthorized act, fraud or misrepresentation, together with his costs, disbursements, in such action: provided, however, that nothing contained herein shall apply to agencies conducted by women for the purpose of securing employment for females only.

Section 5. This act shall take effect and be in force, from and after its passage and publication.

CHAPTER 232, LAWS OF 1899.

SWEATSHOPS.

Section 1. No dwelling or building, or any room or apartment of itself, in, or connected with any tenement or dwelling or other building, shall be used except by the immediate members of the family living therein, for carrying on any process of making any kind of wearing apparel or goods for male or female wear, use, or adornment, or for the manufacture of cigars, cigarettes, or tobacco goods in any form, when such wearing apparel or other goods are to be exposed for sale, or to be sold by manufacturer, wholesalers or jobber, to the trade or by retail, unless such room or apartment shall have been made to conform to the requirements and regulations provided for in this act.

Section 2. Each such room or apartment used for the purposes aforesaid, shall be regarded as a workshop or factory, and shall be separate from and have no door, window or other opening into any living or sleeping room of any tenement or dwelling, and no such workshop or factory shall be used at any time for living or sleeping purposes, and shall contain no bed, bedding, cooking or other utensils, except what is required to carry on the work therein, and every such shop or factory shall have an entrance from the outside direct, and if above the first floor, shall have a separate and distinct stairway leading thereto, and every such workshop or factory, shall be well and sufficiently lighted, heated and ventilated by ordinary, or, if necessary, by mechanical appliance, and shall provide for each person employed therein, no less than two hundred and fifty cubic feet of air space in day time and four hundred cubic feet at night, and shall have suitable closet arrangements for each sex employed therein, as follows: Where there are ten or more persons, and three or more to the number of twenty, are of either sex, a separate and distinct water closet, either inside the building, with adequate plumbing connections, or on the outside at least twenty feet from the building, shall be provided for each sex; when the number employed is more than twenty-five of either sex, there shall be provided an additional water closet for such sex up to the number of fifty persons, and above that number in the same ratio, and all such closets shall be kept strictly and exclusively for the use of the employes and employer or employers of such workshop or factory; provided that where more than one room is used under the direction of one employer, all such rooms are to be regarded as one shop, or factory, and every such workshop or factory shall be kept in a clean and wholesome condition, all stairways and the premises within a radius of thirty feet, shall be kept clean, and closets shall be regularly disinfected and supplied with disinfectants, and the commissioner of

labor and factory inspectors may require all necessary changes, or any process of cleaning, painting or whitewashing which they may deem essential to assure absolute freedom from obnoxious odor, filth, vermin, decaying matters or any condition liable to impair health or breed infectious or contagious diseases; he shall prevent the operation of such shops or factories that do not conform to the provisions of this act, and cause the arrest and prosecution of the person or persons operating the same.

Section 3. No person, for himself or for any other person, firm or corporation shall give out work or contract with, any other person to perform such work necessary to make such goods mentioned in section one, after having received notice from the commissioner of labor or factory inspectors that said latter person has not complied with the provisions of section two of this act, which notice shall remain in force, until said person has complied with this law, of which notice must be given to the employer by the commissioner of labor or the factory inspectors.

Section 4. Every such person, firm or corporation heretofore mentioned, shall obtain and keep a record of all persons to whom work is given out or contracted for, including their names and addresses, which record shall be opened to inspection of the commissioner of labor or the factory inspectors when called for.

Section 5. No person, firm or corporation shall receive, handle or convey to others, or sell, hold in stock or expose for sale, any goods mentioned in section 1, unless made under the sanitary conditions provided for and prescribed in this act; but this act shall not include the making of garments or other goods, by any person for another by personal order, and when received for wear or use direct from the maker's hands, and all violations of the provisions of this act, shall be prosecuted by any of the factory inspectors with the advice and consent of the commissioner of labor.

Section 6. Any person, firm or corporation who shall violate any of the provisions of this act, shall upon conviction thereof, be fined in any sum not less than fifty dollars, nor more than one hundred dollars for each offense, or imprisoned not less than thirty, nor more than sixty days, or both; and in all prosecutions brought by or under the direction of the commissioner of labor for the violation of this act, he shall not be held to give security for costs, or adjudged to pay any costs, but in all cases where the accused be acquitted, or is found to be indigent, the costs shall be paid out of the county treasury of the county in which the proceedings are brought, the same as the costs in all other cases of misdemeanor.

Section 7. This act shall take effect and be in force, from and after its passage and publication.

CHAPTER 189, LAWS OF 1899.

EMERY WHEELS, ETC.

Section 1. That all persons, companies or corporations operating any factory or workshop where emery wheels or emery belts of any description are used for polishing, either solid emery, leather, leather covered, felt, canvas, linen, paper, cotton, or wheels or belts rolled or coated with emery or corundum, or cotton wheels used as buffs, shall, when deemed necessary, by the factory inspector, assistant factory inspector, or any officers of the bureau of labor, provide such polishing wheels or belts with blowers or similar apparatus, which shall be placed over, beside or under such wheels or belts in such manner as to protect the person or persons using the same from the particles of the dust produced and caused thereby, and to carry away the dust arising from or thrown off by such wheels or belts while in operation, directly to the outside of the building or to some receptacle placed so as to receive and confine such dust. Provided, that grinding machines upon which water is used at the point of grinding contact shall be exempt from the provisions of this act; and provided that this act shall apply only to those wheels or belts which are used for polishing and which are contained in the room or apartment usually denominated the polishing room, and which are used continuously therein; and provided further, that this act shall not embrace nor apply to such wheels or belts as cannot be so equipped without impairing the convenient or necessary use thereof.

Section 2. No emery wheels or grindstone in any factory, mill or workshop, shall be used when the same is known to the person using the same to be cracked or otherwise defective, nor operated at a greater speed than indicated or guaranteed by the manufacturer of such emery wheel or grindstone.

Section 3. It shall be the duty of any person, company or corporation operating any such factory or workshop to provide or construct such appliances, apparatus, machinery or other things necessary to carry out the purpose of this act, as set forth in the preceding section, as follows: each and every such wheel shall be fitted with a sheet or cast iron hood or hopper, of such form and so applied to such wheel or wheels that the dust or refuse therefrom will fall from such wheels, or will be thrown into such hood or hopper by centrifugal force, and be carried off by the current of air into a suction pipe attached to same hood or hopper.

Section 4. Each and every such wheel six inches or less in diameter shall be provided with a three-inch suction pipe; wheels six inches to twenty-four inches in diameter, with four-inch suction pipe; wheels from twenty-four inches to thirty-six inches in diameter, with five-inch suction pipe; and all wheels larger in diameter than those stated above

shall be provided each with a suction pipe not less than six inches in diameter. The suction pipe from each wheel, so specified, must be full size as to the main trunk suction pipe, and the main suction pipe to which smaller pipes are attached shall, in its diameter and capacity, be equal to the combined area of such smaller pipes attached to the same, and the discharge pipe from the exhaust fan connected with such suction pipe or pipes shall be as large, or larger than the suction pipe.

Section 5. It shall be the duty of any person, company or corporation operating any such factory or workshop to provide the necessary fans or blowers to be connected with such pipe or pipes, as above set forth, which shall be run at a rate of speed as will produce a velocity of air in such suction or discharge pipes of sufficient force to carry away all dust discharged into the aforesaid hood or hopper. All branch pipes must enter the main trunk pipe at any angle of forty-five degrees or less; the main suction or trunk pipe shall be below the emery or buffing wheels, and as close to the same as possible, and to be either upon the floor or underneath the floor on which the machines are placed to which such wheels are attached. All bends, turns, and elbows in each such pipes must be made with easy, smooth surfaces, having a radius in the throat of not less than two diameters of the pipe on which they are connected.

Section 6. The provisions of sections 4 and 5 shall not apply to existing mills, factories or workshops which, at the time of the passage of this act, have an appliance or appliances designed and used for the purpose of removing such dust from the polishing room, and which said appliance or appliances substantially effect such design.

Section 7. It shall be the duty of every factory inspector of this state, or his deputies to enter any factory or workshop in this state during working hours, and upon ascertaining the facts that the proprietors or managers of such factory or workshops have failed to comply with the provisions of this act, to make complaint of the same in writing before a justice of the peace or police magistrate having jurisdiction, who shall thereupon issue his warrant, directed to the owner, manager or director, in such factory or workshop, who shall be thereupon proceeded against for the violation of this act, as hereinafter mentioned, and it is made the duty of the prosecuting attorney to prosecute all cases under this act.

Section 8. Any such person or persons or company, or managers, superintendents or directors of any such company or corporation, who shall have the charge or management of such factory or workshop, who shall fail to comply with the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof before any court of competent jurisdiction shall be punished by a fine of not less than twenty-five dollars, and not exceeding one hundred dollars.

Section 9. This act shall take effect and be in force from and after its passage and publication.

CHAPTER 79, LAWS OF 1899.

CIGARS, MANUFACTURE OF.

Section 1. No shop or place wherein cigars are manufactured shall be located below the ground floor.

Section 2. Each employee in any shop or place wherein cigars are manufactured, shall, while actually employed, be allowed to use twenty square feet of surface space, unobstructed to the ceiling.

Section 3. Every room wherein cigars are manufactured shall contain at least seven hundred cubic feet of air space. It shall in every part be not less than eight feet in height, from floor to ceiling, every window shall have not less than twelve square feet in superficial area, and the entire area of window surface shall not be less than twelve per cent. of the floor space of such room.

Section 4. Every room in which cigars are manufactured while work is carried on shall be so ventilated that the air shall not become impure and injurious to the health of the persons employed therein, and it shall wherever necessary, by the means of air shafts or other ventilation, be so changed as to render harmless all gases, dust and other impurities generated in the process of manufacturing cigars. All windows are to be kept open for thirty minutes before working hours and for thirty minutes after working hours.

Section 5. Every such shop or place in which one or more persons are employed and every such factory in which five or more persons are employed, shall be kept clean. The dust must be removed from work tables and floors once every day, the floors scrubbed at least once a week and one cuspidor provided for every two employees.

Section 6. No person under eighteen years of age shall be employed or permitted to work in a cigar shop or a cigar factory at manufacturing cigars for longer than eight hours a day or forty-eight hours a week.

Section 7. Where men and women are employed there shall be separate dressing rooms and water closets for the different sexes.

Section 8. Any person violating any provisions of this act shall be punished by fine not exceeding twenty-five dollars and no less than ten dollars for the first offense, and by fine not exceeding fifty dollars, and no less than twenty-five dollars for the second and each following offense.

Section 9. The factory inspector shall have full power and it shall be his duty to enforce all the provisions of this act, but no prosecution shall be instituted for any violation of sections 2, 3 and 4 unless the employer or manufacturer, or the firm has been notified by a notice sent in a registered letter for at least four weeks prior to a prosecution, requiring the necessary changes in the factory workshop, and such request has not been complied with.

Section 10. All acts or parts of act inconsistent with the provisions of this act are hereby repealed.

Section 11. The provisions of this act, shall take effect on and after the first day of July, 1900.

WORK, WHEN EIGHT HOURS A DAY'S.

Section 1729. In all engagements to labor in any manufacturing or mechanical business, where there is no express contract to the contrary, a day's work shall consist of eight hours and all engagements or contracts for labor in such cases shall be so construed; but this shall not apply to any contract for labor by the week, month or year.

WAGES, WHEN PAYABLE; EVIDENCE OF.

Section 1729a. All wages or compensation for labor or service, unless there shall be a written contract to the contrary, shall be paid weekly or bi-weekly in cash; provided, that this section shall not apply to agricultural laborers, commercial travelers, persons employed on commission, traveling employees of railway and express companies, persons employed in logging camps or in driving, running or manufacturing logs or lumber, nor to any person whose occupation is such as to render him inaccessible on the regular pay day. Whenever any person engaged in lumbering or building or in the manufacture of lumber shall defer the payment of all or any part of the wages due employees after the same become due, such employer shall, on demand, give his employees written evidence of indebtedness for the amount so due them, which shall be payable at a date agreed upon and be assignable. Any such employer who shall refuse to give such evidence of indebtedness for money earned shall forfeit not more than fifty dollars.

Validity.—The Mass. court has said that it cannot hold that a statute requiring manufacturers to pay the wages of employees weekly is without the power of the legislature. 163 Mass., 589.

ARBITRATION, ETC., STATE BOARD OF; APPOINTMENT, ETC.

Section 1729b. The state board of arbitration and conciliation as heretofore established is recognized and continued. On the expiration of the terms of the two members thereof appointed by the governor, or sooner if a vacancy shall otherwise occur, the governor shall appoint one member of such board who shall be an employer of labor or be selected from some association representing employers of labor; the other shall be selected from the members of some labor organization and shall not be an employer of labor. The terms of such members shall be for two years unless they are sooner removed by the governor.

Vacancies shall be filled for the unexpired term. The third member of said board shall be appointed by the governor upon the recommendation of those previously appointed; provided, that if such recommendation is not made to the governor within thirty days after their appointment he may appoint any person such third member. Each member shall, before entering upon the duties of his office, take the oath prescribed by the constitution; such oath shall be filed in the executive office. Said board shall organize by choosing one member as chairman and another as secretary, and shall adopt rules of procedure and submit them to the governor and attorney general, which rules shall be in force on approval thereof by them. All requests and communications intended for said board may be addressed to the governor at Madison, who shall at once refer the same to the board for their action.

DUTY OF BOARD.

Section 1729c. Whenever any controversy or difference, not the subject of litigation, exists between an employer, whether an individual, co-partnership or corporation, and his employees, if at the time he employs not less than twenty-five persons in the same general line of business in any one place, said board may, without any application therefor or upon application, and as soon as practicable thereafter, visit the locality where the controversy exists and make careful inquiry into the cause thereof, hear all persons interested therein who may come before them, advise the respective parties what, if anything, should be done or submitted to by either or both to adjust the same and make a written decision thereof. Such decision shall at once be made public by publication in two or more newspapers published in the locality where such controversy exists, shall be recorded upon books of record to be kept by the secretary of said board, and a succinct statement thereof published in the report hereinafter provided for, and said board shall cause a copy of said decision to be filed with the clerk of the city, village or town where said business is carried on.

ARBITRATION, ETC., PROCEDURE, ETC.

Section 1729d. Said application shall be signed by such employer or by a majority of his employees in the department of the business in which the controversy exists, or by their duly authorized agent, or by both parties, and shall contain a concise statement of the grievances complained of and an agreement to continue in business or at work without any lockout or strike until the decision of said board is made known; provided, that said board shall render its decision within thirty days after the date of filing such application. As soon as may be after the receipt of said application the secretary of said board

shall cause public notice to be given of the time and place for the hearing thereof; but such notice need not be given when both parties to the controversy join in the application and request in writing that it be not given. When notice has been given or dispensed with as aforesaid the board may in its discretion appoint two expert assistants, one to be nominated by each of the parties to the controversy, and such additional expert assistants as they may deem necessary. Such assistants shall be sworn to the faithful discharge of their duty. Should the petitioner or petitioners fail to perform the agreement made in said application the board shall proceed no further thereupon without the written consent of the adverse party. The board shall have power to subpoena as witnesses any operative in the departments of business affected by the controversy and any person who keeps the record of wages earned in such departments, to examine them under oath and require the production of books containing the record of wages paid. Subpoenas may be signed and oaths administered by any member of the board.

EFFECT OF DECISION; NOTICE.

Section 1729e. The decision of said board shall be binding upon the parties who join in the application therefor for six months after the same is filed with the proper city, village or town clerk or until either party has given the other notice in writing of his intention not to be bound thereby from and after the expiration of sixty days from the date thereof. Said notice may be given by serving it upon the employer or his representative, and upon the employees by posting it in three conspicuous places in the shop, factory, yard or upon the premises where they work.

DUTY OF MAYOR, BOARD, ETC.

Section 1729f. Whenever any mayor, board of village trustees or town board shall believe that a strike or lockout is seriously threatened or has actually occurred, and that it threatens to or does involve the business interests of the city, village or town represented by said mayor, trustees or board, such mayor, trustees or board shall at once notify the secretary of the state board of arbitration and conciliation of the fact and furnish him with such information as may be available; and it shall be the duty of the state board to investigate the condition there prevailing as soon as may be, and endeavor by mediation to effect an amicable settlement between the employer and employees directly concerned in such strike or lockout, and endeavor to persuade them to submit the matters in controversy to the local board of arbitration and conciliation, as hereinafter provided for, or to the state board; but the latter may, if it deems it

advisable, investigate the cause or causes of such controversy, ascertain which of the parties is mainly or wholly responsible for the existence or continuance thereof and may make and publish a report stating its conclusions in the premises.

WITNESS' FEES.

Section 1729g. Witnesses subpoenaed by the state board shall be allowed for their attendance and travel the same fees as are paid witnesses in the circuit courts; each such witness shall certify under oath in writing the amount of his travel and the length of time of his attendance; and upon the approval of such statement by the board and the presentation thereof to the secretary of state a warrant shall be drawn in his favor therefor.

EXPENSES AND COMPENSATION.

Section 1729h. The members of said board shall be reimbursed the actual and necessary expenses incurred in the performance of their duties and be paid five dollars per day each for every day actually and necessarily occupied therein, accounts for which properly verified, shall be audited by the secretary of state.

REPORT.

Section 1729i. The board shall, at the close of every biennial fiscal term, make a report to the governor which shall contain a succinct statement of the decisions made by them during the preceding two years and such recommendations as they may deem proper; such report shall be printed to the number of two thousand copies in the style other official reports are printed and be distributed in the same way.

LOCAL BOARDS OF ARBITRATION.

Section 1729j. The parties to any controversy within the provisions of section 1729c may submit the same, by an instrument in writing, for adjustment to a local board of arbitration and conciliation which may either be mutually agreed upon or the employer may designate one of such arbitrators, the employees or their duly authorized agent another, and the two so designated may choose a third, who shall be chairman thereof; such board shall in respect to the matters referred to it have and exercise all the powers which the state board might have and exercise, and its decision shall have such binding effect as may be agreed upon by the parties to the controversy in the submission. The jurisdiction of such local board shall be exclusive in respect to the matters submitted to it, but it may ask and receive the ad-

vice and assistance of the state board. Such local board shall render its decision in writing within ten days after the close of any hearing held by it and file a copy thereof with the secretary of the state board. Each member of the local board shall be entitled to receive from the treasurer of the city, village or town in which the controversy or difference that is the subject of arbitration exists, if such payment is approved in writing by the mayor, the board of trustees of the town board, three dollars for each day of actual service, not exceeding ten days of any one arbitration.

CHAPTER 84.

LIENS, ETC., OF MARKED LOGS TO BE RECORDED.

Section 1739. All * * liens, * * in any way affecting the ownership of any marked logs in any lumber district which shall specify the marks placed upon said logs and when they were cut shall be recorded in the office of the lumber inspector in which said marks are recorded; and no * * lien, * * shall be valid, except as to the parties thereto, until the same is so recorded or until the same shall be filed with some deputy lumber inspector, who shall immediately forward such instrument to the inspector of the proper district. Such filing and recording of all instruments and papers shall have the same effect as the recording of deeds and mortgages in the office of the register of deeds.

CHAPTER 85.

STOCKHOLDERS' LIABILITY; WAGES OF EMPLOYEES.

Section 1769. The stockholders of every corporation, other than railroad corporations, shall be personally liable to an amount equal to the stock owned by them respectively in such corporation for all debts which may be due and owing to its clerks, servants and laborers for services performed for such corporation, but not exceeding six months' service in any one case. Whenever any railway corporation in this state shall be placed by any court of this state in the hands of a receiver, whether upon foreclosure or creditors' bill, it shall be the duty of such receiver to report immediately to the court so appointing him the amount due by said railroad company or by the person or persons who were operating said road at the date of such receiver's appointment to employees and laborers upon said road, and it shall be the duty of said court to order the said receiver to pay out of the first receipts and earnings of said railway, after paying cur-

rent operating expenses under his administration, the wages of all employees and laborers which had accrued within six months prior to the appointment of such receiver.

LABOR PERFORMED IN ANOTHER STATE.

All laborers without reference to the place where the labor is performed, have a right to share equally with laborers who perform work in this state in its benefits. *Clokus v. Hollister, M. Co.*, 92 Wis., 325.

Clerks, servants and laborers.—The superintendent or foreman of a corporation is a servant thereof though he does not perform any manual labor. If money is paid to him in part payment for his services, and no special application is made, it will be considered as applying to wages first earned. *Sleeper v. Goodwin*, 67 Wis., 577.

CHAPTER 86.

INVENTORS, CORPORATIONS TO ENCOURAGE.

Section 1781. Any corporation formed under this chapter for the purpose of encouraging or aiding inventors or patentees shall have power to manufacture the articles patented, the right to which may be obtained by it, to experiment upon and test the value of inventions and discoveries before patented and to dispose of patent rights and articles manufactured.

CORPORATIONS, MUTUAL CO-OPERATIVE.

Section 1786c. Any number of persons, not less than five, may become a body corporate for the purpose of engaging in and carrying on any trade or business upon the mutual, reciprocal or co-operative plan, under such rules and regulations as they may adopt conformably to the provisions of this section. Such association may sue and be sued, hold property, execute deeds and contracts and have all the rights and privileges of other corporations. No member of such association shall hold more than one office at one time. Members, and not shares of stock, shall vote in electing officers and transacting business of whatsoever nature; but no proxies shall be allowed. No officer shall be elected nor the constitution or by-laws changed except by a two-thirds vote by ballot of all the members present at a regular meeting of which each member shall have had reasonable notice; nor shall any new business or trade be entered into, contracts made or property bought or sold except by such a vote so taken unless the executive committee or other elected officers shall be expressly empowered to do so by the constitution or by-laws. The shares shall not be less than one dollar nor more than ten dollars each, but members or the association itself may own shares in any similar associa-

tion limited in respect to numbers holding office as herein mentioned; provided, that the association as such may own as much as one-third of the capital stock of any similar association; but no association shall have more than one vote in the management of the affairs of any other association in which it may be a shareholder. Persons not members may be employed by such association, but no officer, member or employee shall hold or handle any funds belonging to the association or in any manner transact its business without first giving a bond to the association in such sum as it shall require, with three sureties, who shall each qualify in double such amount. No such association shall ever become indebted or enter into obligations for any property or thing whatsoever for more than two-thirds of the capital stock fully paid up. Persons not members may purchase goods from such associations, but never for anything but cash or, in exchange for products at cash prices; all sales at retail shall be for cash or products at such prices; provided, that any association when engaged in manufacturing or wholesaling may grant the terms and credits usual to the trade so far as may be deemed judicious and safe. The capital stock held by members shall be exempt from execution and attachment except for debts of the association; and no member shall be liable for such debts beyond a sum equal to the par value of his capital stock paid up and then only in the proportion that his stock bears to the entire paid up stock. Taxes shall be levied and collected on the property and goods actually owned and possessed by any such association at the time of making the assessment and not on its capital stock or shares.

TRUSTS, ETC., TO FIX PRICES, ETC., FORBIDDEN.

Section 1791j. Corporations organized under the laws of this state are prohibited from entering into any combination, conspiracy, trust, pool, agreement or contract intended to restrain or prevent competition in the supply or price of any article or commodity in general use in this state or constituting a subject of trade or commerce therein, or to control the price of any such article or commodity, to regulate or fix the price thereof, to limit or fix the amount or quantity thereof to be manufactured, mined, produced or sold in this state, or to fix any standard or figure by which its price to the public shall be in any manner controlled or established.

TRUSTS, ETC. DUTY OF ATTORNEY GENERAL.

Section 1791k. Whenever the attorney general shall be notified or have reason to believe that any such corporation has violated any provision of section 1791j it shall be his duty forthwith to address to any such corporation or to any director or officer thereof such inquiries as he may deem necessary for the purpose of determining

whether or not such corporation has violated any provision of said section, and it shall be the duty of such corporation, director or officer so addressed to promptly and fully answer in writing, under oath, such inquiries; and in case such corporation, director or officer thereof shall fail or neglect to do so within sixty days from the receipt of such inquiries, unless such time is extended in writing by the attorney general, it shall be his duty to proceed against such corporation as provided in the next section.

CHAPTER 87.

RAILROADS. FROG GUARDS.

Section 1809b. Every railroad corporation shall erect and maintain sufficient guards or blocks at the front and rear of every frog in its track. If any such corporation, its officers, agents or servants shall violate or fail to comply with any of the provisions of this section or fail to sufficiently guard such frogs, it shall, for each and every such violation or failure, forfeit not less than fifty dollars nor more than five hundred dollars, one-half to the person prosecuting, and shall in addition be liable to the person injured for all the damages sustained thereby, whether such person shall be a servant or agent of such corporation or not, and notwithstanding such violation or failure shall arise or occur through the negligence of some other agent or servant thereof.

At common law leaving a railroad frog unguarded is not such negligence as renders the company liable for injuries resulting therefrom regardless of the contributory negligence of the person injured. That rule is not changed by this statute: *Holum v. Chicago R. Co.*, 80 Wis., 299.

WALKING ON TRACK OF.

Section 1811. * * * It shall not be lawful for any person, other than those connected with or employed upon the railroad, to walk along the track or tracks of any railroad except when the same shall be laid along public roads or streets; provided, this section shall not be construed to prevent any person from driving across any such roads from one part of his own land to another.

RAILROADS. LABORERS' LIENS.

Section 1815. As often as any contractor for the construction or repair of any railroad or part thereof in progress of construction or repair shall be indebted to any laborer for thirty days' labor or less, either manual or team labor, or both, including team and driver, performed in constructing or repairing such road, such laborer may,

within thirty days after his claim or demand shall have accrued, serve notice in writing, signed by him, his agent or attorney, on the corporation either owning or constructing or repairing such road that he claims such indebtedness, stating the amount thereof, the number of days' labor, and the time when performed, and the name of the contractor from whom due, and thereupon such corporation shall be directly liable to such laborer for the amount so due him, provided he brings his action therefor within sixty days after the service of such notice. Such notice shall be served by delivering a copy thereof to an engineer, agent or superintendent in the employment of the corporation having charge of the part of the road on which such labor was performed, personally, or by leaving the same at his office or usual place of business with some person of suitable age therein.

The laborers lien accrues for work performed for any contractor, whether a principal or sub-contractor. *Mundt v. R. Co.*, 31 Wis., 451.

A notice is sufficient though not naming the contractor by whom plaintiff was employed. *Ibid.* Where it was customary to pay the laborers on a certain day of each month, held, that their claim did not accrue till such pay day and that notice within thirty days thereafter was sufficient. *Ibid.*

Rule of construction.—Such statutes are not to be extended or restricted in their construction beyond the fair meaning of the words used: *Blanchard v. Portland, etc., R. Co.*, 87 Me., 241.

Liability of corporation to laborers.—As garnishee of its contractor, the company is liable only for so much as shall remain due him after the determination of its contingent liability to his laborers who have complied with the statute. *Vollmer v. Chicago & N. R. Co.*, 86 Wis., 305.

RAILROADS. LIABILITY FOR WAGES.

Section 1815a. Whenever any railway corporation shall become the successor of a pre-existing railway corporation which operated a railroad in this state and was indebted to its employees of whatever grade for services performed by them within six months prior to its disposal of its road, such first-mentioned railway company shall be liable for the amount then due such employees.

RAILROADS. LIABILITY FOR INJURIES TO EMPLOYEES.

Section 1816. Every railroad company operating any railroad which is in whole or in part within this state shall be liable for all damages sustained within the same by any of its employees without contributory negligence on his part:

1. When such injury is caused by a defect in any locomotive, engine, car, rail, track, machinery or appliance required by said company to be used by its employees in and about the business of their employment, if such defect could have been discovered by such company by reasonable and proper care, tests or inspection; and proof of such

defect shall be presumptive evidence of knowledge thereof on the part of the company.

2. While any such employee is so engaged in operating, running, riding upon or switching passenger, freight or other trains, engines or cars, and while engaged in the performance of his duty as such employee, and which such injury shall have been caused by the carelessness or negligence of any other employee, officer or agent of such company in the discharge of or for failure to discharge his duties as such.

No contract, receipt, rule or regulation between any employee and a railroad corporation shall exempt such corporation from the full liability imposed by this section.

Burden of proof.—The mere fact that the words "without contributory negligence on his part" are embodied in this section do not operate to change the burden of proof from the defendant to the plaintiff. *Dugan v. Chicago, etc., R. Co.*, 85 Wis., 609.

Employee.—An Ohio statute requiring railroad companies to fill or block frogs, switches and guard-rails "so as to prevent the feet of its employees from being caught therein" has been held to extend to the servant of another company than that owning the track, he being thereon rightfully in the discharge of his duty; as where such company received on its tracks cars of another company to be delivered and transported by the receiving company, and the person injured was engaged in inspecting the cars so delivered. The court observed that "employee" did not mean simply those men on the pay-rolls of the company which owned the track, but all employees and servants authoritatively engaged in and about the tracks and guard-rails of the company. *Atkyn v. Wabash R. Co.*, 41 Fed. Rep., 193.

DUTY OF ENGINEERS AND OTHERS TO REPORT FIRES ALONG RIGHT OF WAY.

Section 1816a. * * * * * Engineers, conductors or trainmen who discover that fences or other material along the right of way or on lands adjacent to the railroad are burning or in danger from fire shall report the same at their next stopping place at which shall be a telegraph station. In seasons of drought railroad companies shall give particular instructions to their section employees for the prevention and prompt extinguishment of fires. * * * Any officer or employee of any railroad company violating any of the provisions of this section shall be punished by a fine of not more than one hundred dollars and the costs of prosecution.

STREET RAILROADS. VESTIBULE CARS.

Section 1862b. Every person, partnership or corporation owning or operating a street car line in this state, the cars upon which are propelled by steam, cable or electricity, shall provide all closed winter cars with a suitable protection constructed of wood, iron, glass or

other material sufficient to protect the employees engaged in operating any such cars from exposure to the inclemencies of the weather, such protection to be maintained from the first day of November to the first day of April in each year; provided, that such protection shall be so constructed as not to obstruct the vision of the person operating such car. Any, such person, partnership or corporation owning, operating, superintending or managing any such line of street railway or the managing or superintending officer or agent thereof who shall be found guilty of a wilful refusal to comply with this section shall be punished by a fine of not less than fifty dollars nor more than one hundred dollars. Each day that any of said persons cause or permit any of their employees to operate such cars in violation of the provisions of this section or cause or permit cars to be used or operated in violation hereof shall be deemed a separate offense; provided, that the provisions of this section shall not apply to cars used and known as trailing cars. It is hereby made the duty of the attorney of any municipality in which such street railway is situated and operated, upon information given to him by any person of any violation of this section, to promptly prosecute such person, partnership or corporation.

Validity.—A similar statute has been sustained in Ohio against the objection that it does not have a uniform operation throughout the state. *State v. Nelson*, 39 N. E. Rep., 22.

CHAPTER 108.

MARRIED WOMEN. INDIVIDUAL EARNINGS.

Section 2343. The individual earnings of every married woman, except those accruing from labor performed for her husband, or in his employ or payable to him, shall be her separate property and shall not be subject to her husband's control or liable for his debts.

MARRIED WOMEN. MAY TRANSACT BUSINESS IN HER OWN NAME AND FOR HER OWN BENEFIT.

Section 2344. When the husband of any married woman shall have deserted her or shall from drunkenness, profligacy or any cause neglect or refuse to provide for her support or for the support and education of her children she shall have the right to * * * her own earnings and the earnings of her minor children in her charge or under her control, and apply the same for her own support and the support and education of such children. Such * * * earnings shall not be subject to her husband's control or interference or liable for his debts.

MARRIED WOMEN. MAY SUE IN HER OWN NAME.

Section 2345. Every married woman may sue in her own name and shall have all the remedies of an unmarried woman * * * to recover the earnings secured to her by the two next preceding sections, and * * * any married woman may bring and maintain an action in her own name for any injury to her person * * * and any judgment recovered in such action shall be the separate property and estate of such married woman, provided that nothing herein contained shall affect the right of the husband to maintain a separate action for any such injuries as now provided by law.

CHAPTER 105.

AGREEMENTS. WHAT MUST BE WRITTEN.

Section 2307. In the following case every agreement shall be void unless such agreement or some note or memorandum thereof, expressing the consideration, be in writing and subscribed by the party charged therewith:

1. Every agreement that by its terms is not to be performed within one year from the making thereof.

* * * * *

What a compliance.—The requirements of the statutes are met if the substance of the contract can be inferred from writings either by the parties or their agents, though the writings consist of memoranda or protracted correspondence. *Peck v. Vanderhack*, 99 N. Y., 29.

CHAPTER 89.

EMPLOYER'S LIABILITY POLICY.

Section 1966-42. No casualty corporation issuing employer's liability policies shall condition the same upon compliance by the assured with "any law or ordinance respecting the safety of persons," but shall clearly and distinctly state what conditions and requirements are to be complied with by him.

Construction.—The policy covered liability for injuries to plaintiff's employees in "all operation connected with the business of iron and steel works." Held, that the risk was not limited to the employees in the operating department of the business, and that an injury caused by the fall of a girder which was being raised by an independent crew engaged in building an addition to the works was within the quoted words. *Hoven v. Employers' Liability Assurance Corp.*, 93 Wis., 201.

CHAPTER 110.

APPRENTICES. MINORS MAY BIND THEMSELVES.

Section 2377. Every male minor and every unmarried female under the age of eighteen years, with the consent of the persons or officers hereinafter mentioned, may, of his or her own free will, bind himself or herself in writing to serve as clerk or apprentice in any profession, trade or employment; if a male, until the age of twenty-one years, and if a female, until the age of eighteen years or until her marriage within that age or for any shorter time; and such binding shall be as valid and effectual as if such minor were of full age at the time of making such engagement.

APPRENTICES. CONSENT, WHO TO GIVE.

Section 2378. Such consent shall be given:

1. By the father of the minor; if he be dead, or be not in a legal capacity to give his consent, or if he shall have abandoned and neglected to provide for his family and such fact be certified by a justice of the peace of the town and indorsed on the indenture, then,
2. By the mother; if the mother be dead or be not in a legal capacity to give such consent, or refuse, then,
3. By the guardian of such minor duly appointed; if such minor have no parent living or none in legal capacity to give consent and there be no guardian, then,
4. By the supervisors or any two justices of the peace of the town where such minor shall reside, or,
5. If such minor be illegitimate, by the mother whether the putative father be living or not.

Such consent shall be signified by the persons or officers entitled to give the same by writing at the end of or endorsed upon each part of the indentures, signed by such persons or officers, and not otherwise.

APPRENTICES. INDENTURES TO BE EXECUTED.

Section 2379. No minor shall be bound as aforesaid unless by indentures in two parts, sealed and delivered by both parties. Every such indenture shall provide for instructing the apprentice or clerk in some profession, trade or employment, specifying the same; for teaching him to read and write; for instructing him in the general rules of arithmetic and for such other instruction, benefit and allowance as may be agreed upon; and that the master shall give to such apprentice at the end of his service a new bible; but whenever any minor shall be so bound for less than three years such agreement in reference to instruction may be such as shall be deemed reasonable.

APPRENTICES. AGE OF MINOR TO BE INSERTED, ETC.

Section 2380. The age of every minor so bound shall be inserted in the indentures and shall be taken to be the true age, without further proof thereof; and whenever any public officers are authorized to execute any indentures or their consent is required to the validity of the same it shall be their duty to inform themselves fully of the minor's age. The counterpart of any indentures executed by any public officer or other officers shall be by them deposited in the office of the clerk of their own town or city.

APPRENTICES. MONEY FOR USE OF MINOR.

Section 2381. All considerations of money or other things paid or allowed by the master upon any indenture of apprenticeship or service, made in pursuance of this chapter, shall be paid or secured to the sole use of the minor bound thereby.

An infant who serves the agreed time as an apprentice may maintain an action against the master upon the contract to recover the price stipulated. The master is liable, although the contract was not binding upon the infant for want of conformity to the statute. *Davis v. Turton*, 13 Wis., 185.

APPRENTICES. PARENTS, ETC., MAY BE A PARTY.

Section 2382. Any parent, guardian or other person may become a party to any indenture of apprenticeship, by signing and sealing the same, together with the minor, and may thereby become liable to the master for the performance of any or all the covenants contained in such indenture to be performed by the minor.

APPRENTICES. INQUIRY AS TO TREATMENT OF.

Section 2383. All persons shall inquire into the treatment of apprentices bound by them respectively, or with their consent or approbation, or who shall have been bound by their predecessors in office, and defend them from all cruelty, neglect and breach of the indentures on the part of their masters.

APPRENTICES. PROCEEDING ON COMPLAINT OF ILL-TREATMENT.

Section 2384. If any apprentice shall be misused, ill-treated or neglected by his master or by any person under the direction or by the permission of such master any person in his behalf may file a complaint in the county court for the county in which the master resides, setting forth the facts and circumstances of the case, and the court, after hav-

ing caused such notice as it shall deem reasonable to be given to the master, shall proceed to hear and determine the cause, whether the master shall appear or not; and if the complaint be sustained may make an order that the minor be discharged from his apprenticeship or service and that the costs of the proceeding be paid by the master; but if such complaint be not sustained the court shall order the costs to be paid by the complainant to the master, and in either case may issue execution therefor; provided, that if such complaint be made by an officer authorized to bind out minors the court shall not award costs against him unless it shall appear that the complaint was made without any just or reasonable cause. Either party may appeal from any such order to the circuit court in the manner provided for appeals from orders made in probate proceedings.

APPRENTICES. LIABILITY OF MASTER.

Section 2385. Every master shall also be liable to an action on the indenture for a breach of any covenant thereof on his part, which action shall be brought by the minor.

APPRENTICES. ACTION FOR DAMAGES.

Section 2386. No such action shall be maintained by any apprentice unless it be commenced during the term of apprenticeship or within two years after the expiration thereof. If, in any such action, a recovery be had during his minority the damages recovered, after paying the necessary expenses of the prosecution, shall be the property of such minor and may be appropriated to his use or invested for his benefit. Upon final judgment rendered in any such action in favor of the plaintiff the court may, by an order to be entered in its minutes, discharge the minor from his apprenticeship.

APPRENTICES. PROCEEDINGS IF LEAVE SERVICE; ARREST.

Section 2387. If any apprentice, bound as aforesaid, shall unlawfully depart from the service of his master any justice of the peace, upon complaint on oath made to him by the master or by any one in his behalf, may issue his warrant to apprehend the apprentice and bring him before such justice.

APPRENTICES. ORDER OF JUSTICE, COSTS, ETC.

Section 2388. If, after hearing the parties, the justice shall find that the complaint is supported he may order the apprentice to be returned to his master or he may commit him to the county jail for a time not exceeding twenty days unless sooner discharged by his master; and may issue his warrant, directed to any officer or other person by name,

which shall authorize him to deliver such apprentice to his master in any county in this state. All costs incurred on any such process against an apprentice shall be paid in the first instance by the master; and if the complaint be supported the amount of such costs may be recovered in an action against the minor after he shall arrive at full age.

APPRENTICES. TIME LOST TO BE MADE UP; ACTION.

Section 2389. All time wilfully or unlawfully lost from the service of his master by any apprentice shall be returned by him day for day immediately at the expiration of the apprenticeship; and if such apprentice refuse thus to return the same he shall be liable therefor to his master for damages; but no action shall be maintained, either under this or the preceding section, unless the same be brought within three years after the expiration of such apprenticeship.

APPRENTICES. PROCEEDINGS AGAINST MINOR FOR MISBEHAVIOR.

Section 2390. If any such apprentice or servant shall be guilty of any gross misbehavior, or refusal to do his duty, or wilful neglect thereof his master may file his complaint in the county court of the county where he resides, and the court, after causing such notice as it shall deem reasonable to be given to the parent or such guardian who consented to the binding of such apprentice or servant, or to the officers who bound him or their successors in office, shall proceed to hear and determine the cause; and if, after a full hearing of the parties or of the complainant, if the adverse party does not appear, may make an order that the master be discharged from the contract of apprenticeship or service and for the costs of the proceeding, which costs may be recovered against the minor, with interest thereon within three years after he shall have arrived at full age.

APPRENTICES. CONTRACT AS TO TRADE PROHIBITED.

Section 2391. No master shall accept from any apprentice any contract or agreement or cause him to be bound by oath or otherwise that after his term of service has expired such apprentice shall not set up his trade, profession or employment in any particular place, shop, house or cellar; nor shall any master exact from any apprentice, after his term of service has expired, any money or other things for using or exercising his trade, profession or employment in any place.

APPRENTICES. INDENTURE VOID AFTER MASTER'S DEATH.

Section 2392. No indenture of apprenticeship or service, made in pursuance of this chapter, shall bind the minor after the death of the

master; but the minor shall be thenceforth discharged therefrom and may be bound out anew.

APPRENTICES. INDENTURE, WITH WHOM IT MAY BE MADE.

Section 2393. An indenture of apprenticeship or service, made in pursuance of this chapter, by or in behalf of a minor, may be made either with a woman or a man capable in law of contracting; and all the foregoing provisions shall apply as well to mistresses as to masters.

APPRENTICES. COMMON-LAW RIGHTS NOT AFFECTED.

Section 2394. Nothing in this chapter contained shall prevent or affect the right of a father, by the common law, to assign or contract for the services of his children for the term of their minority or any part thereof.

CHAPTER 126.

RECEIVER. REPORT OF AND PAYMENT OF EMPLOYEES' WAGES.

Section 2787a. Whenever a receiver shall be appointed by any court to manage, conduct, settle, adjust or close up any mercantile, manufacturing or other business such receiver shall immediately report to the court the amount due the employees and laborers in such business; and said court shall order its receiver to pay out of the first receipts of said business, after the payment of costs, debts due the United States or this state, taxes and assessments and the current expenses of carrying on or closing said business, the wages of such employees and laborers which accrued within three months immediately prior to his appointment.

A stockholder in a corporation which has never been organized so that it might do business with others than its stockholders cannot be a preferred creditor under this section on account of money paid laborers for the corporation immediately preceding the appointment of a receiver. *Fay & Egan Co. v. Brown*, 76 Wis., 434; 71 N. W. Rep., 895.

CHAPTER 130.

EXEMPTION. ENUMERATION OF PERSONALTY.

Section 2982. No property hereinafter mentioned shall be liable to seizure or sale on execution or on any provisional or final process issued from any court or any proceedings in aid thereof, except as otherwise specially provided in these statutes:

1. The family bible.
2. Family pictures and school books.

3. The library of the debtor and every part thereof; but this provision shall not be deemed to extend to circulating libraries.

4. A seat or pew in any house or place of public worship.

5. All wearing apparel of the debtor and his family; all beds, bedsteads and bedding kept and used for the debtor and his family; all stoves and appendages put up or kept for the use of the debtor and his family; all cooking utensils and all other household furniture not herein enumerated, not exceeding two hundred dollars in value; and one gun, rifle or other firearm, not exceeding fifty dollars in value.

6. Two cows, ten swine, one yoke of oxen and one horse or mule, or in lieu of one yoke of oxen and one horse or mule, two horses or two mules, ten sheep and the wool from the same, either in the raw material or manufactured into yarn or cloth; the necessary food for all the stock mentioned in this section for one year's support, either provided or growing, or both, as the debtor may choose; also one wagon, cart or dray, one sleigh, one plow, one drag and other farming utensils, including tackle for teams, not exceeding two hundred dollars in value.

7. The provisions for the debtor and his family necessary for one year's support, either provided or growing, or both, and fuel necessary for one year.

8. The tools, implements and stock in trade of any mechanic, miner, merchant, trader or other person, used or kept for the purpose of carrying on his trade or business, not exceeding two hundred dollars in value.

9. All sewing machines used by individuals and kept for the use of themselves or family.

* * * * *

11. Printing materials and press or presses used in the business of any printer or publisher to an amount not exceeding fifteen hundred dollars in value; provided, that no sum exceeding four hundred dollars shall be exempt from execution for the payment of wages of laborers or servants for services rendered the defendant.

* * * * *

14. The interest owned by any inventor in any invention secured to him by letters patent of the United States.

15. The earnings of any person or persons having a family dependent upon him or them for support at the time of the commencement of proceedings for the collection of the debt, including the earnings of any minor child or children whose earnings contribute to the support of such family, for three months next preceding the issue of any writ of attachment, execution, garnishment or the institution of proceedings supplementary to execution, to the amount of sixty dollars only for each month in which such earnings are made or earned; provided, they shall not exceed one hundred and eighty dollars in all for said time, including such part or share thereof had, by or paid to the debtor during such three months. The garnishee shall recover costs when the debt

or property sought to be reached is exempt from execution against the principal debtor at the time of serving the process on the garnishee.

* * * * *

17. All moneys arising from insurance of any property exempted from sale on execution, including the homestead, when such property has been destroyed by fire.

* * * * *

19. All moneys arising on any policy of insurance on the life of a minor, payable to his father or mother, or both, shall be exempt against the creditors of such father or mother, but not against the creditors of such minor; all moneys arising under any policy of insurance payable to a married woman or to any person in trust for her or her benefit shall be exempt from the claims of her husband and of the person effecting or assigning such insurance for her benefit and from the claims of their respective representatives and creditors, subject to the provisions of section 2347; and all moneys or other benefit, charity, relief or aid to be paid, provided or rendered by any mutual beneficiary or fraternal corporation, society, order or association providing insurance on the assessment plan and authorized to do business in this state, shall be exempt against the creditors of a member thereof or of his beneficiary or beneficiaries to the amount of five thousand dollars in all cases where the insured pays the premiums or assessments or any part thereof; but if some other person pays such premiums or assessments the insurance shall be absolutely exempt.

20. Cemetery lots owned by individuals and all monuments therein the coffins and other articles for the burial of any dead person, and the tombstone or monument for his grave by whomsoever purchased.

* * * * *

Earnings.—If a person within this clause begins an action to recover his earnings immediately after the right to do so accrued it seems that an equitable set-off thereto would not be allowed. But if such action is not brought within three months after the debt became due such set-off will be allowed, notwithstanding plaintiff alleges that the defendant fraudulently induced him to wait for his pay for the purpose of preventing him from claiming that the money due him was exempt from seizure for his debts and concealed from him that fact that the defendant owned the judgment pleaded as a set-off. *Seligman v. Heller B. C. Co.*, 69 Wis., 410.

This clause applies to all who support themselves and their families by the labor of their hands, regardless of the grade or character of such labor. *Brown v. Hebard*, 20 Wis., 326.

All that a person entitled to the privilege of the statute may earn within the fixed time by the aid of his team, wagon or dray and tackle is included. *Kuntz v. Kinney*, 33 Wis., 510.

Persons having a family dependent upon them.—An unmarried man who, with his sister, keeps house for and partly supports his brothers and sisters is the head of a family, and it is immaterial that his mother's residence is elsewhere and that she aids in supporting the children. *Duncan v. Frank*, 8 Mo. App., 286.

An unmarried woman who keeps house and cares for two children of her deceased sister is the head of a family though she has not taken steps to adopt them under the statute. *Arnold v. Waltz*, 53 Iowa, 706.

HOMESTEAD EXEMPTION.

Section 2983. A homestead, to be selected by the owner thereof, consisting, when not included in any city or village, of any quantity of land not exceeding forty acres, used for agricultural purposes, and when included in any city or village, of any quantity of land not exceeding one-fourth of an acre and the dwelling house thereon and its appurtenances, owned and occupied by any resident of this state, shall be exempt from seizure or sale on execution, from the lien of every judgment and from liability in any form for the debts of such owner, except laborers,' mechanics' and purchase money liens, and mortgages lawfully executed, and taxes lawfully assessed, and except as otherwise specially provided in these statutes; and such exemption shall not be impaired by temporary removal, with the intention to reoccupy the same as a homestead, nor by a sale thereof, but shall extend to the proceeds derived from such sale while held with the intention to procure another homestead therewith, for a period not exceeding two years. Such exemption shall extend to land not exceeding altogether the amount aforesaid, owned by a husband and wife jointly or in common, and to the interest therein of a tenant in common or two or more tenants in common, having a homestead thereon, with the consent, expressed or implied, of the co-tenants, and to any estate less than a fee held by any person by lease or otherwise.

CHAPTER 143.

LIENS. WHO MAY HAVE AS PRINCIPAL CONTRACTOR, ETC.;
FOR THAT WORK; WHAT SUBJECT TO; PRIORITY; LIABILITY
TO ASSIGNEE; GARNISHMENT.

* Section 3314. Every person who, * * * as principal contractor, architect, civil engineer or surveyor who performs or procures to be performed any work or labor, * * * or prepares any plans, specifications or estimates:

1. For or in or about the erection, construction, repair, protection or removal of any dwelling house, building or appurtenance thereto, structure, bridge, wharf, dock, pier, fence, wall or screen or other permanent erection or any machinery so erected or constructed as to be or become a part of the freehold upon which it is situated;
2. In or about the improving or equipping of any house or building with chandeliers, brackets, wires, pipes or appurtenances for supplying gas, electricity or other light, water or heat;
3. In the dredging, digging, excavating, constructing or equipping any channel, well, cellar, vault, fountain, fish-pond, trench or tunnel;

* Amended by sec. 1, ch. 222, laws of 1899, by inserting words in parenthesis.

4. In the filling, dredging, improving, digging, driving or removing piles in any water or water-course, any water-lot, meadow, marsh, swamp or other low lands;

5. In the making or repairing any walk, sidewalk, crosswalk, curbing or apron;

6. In grading, graveling, leveling or otherwise constructing or repairing any street, alley, roadway or gutter upon land, irrespective of any easement on or over said land;

7. Or in setting out or planting any hedge, or fruit or ornamental trees;

Shall have a lien thereupon and upon the interest of the owner of any such building, machinery or other structure or work of any kind herein mentioned, or of the interest of the person causing such work or labor to be done, or such materials, plans, specifications or estimates to be furnished in and to the land upon which the same is situated, not exceeding forty acres, or if within the limits of a city or incorporated village upon the piece or parcel of land designed for use in connection with such house, building, machinery, structure or other such work, not exceeding one acre. Such lien shall be prior to any other lien which originates subsequent to the commencement of construction, repairs, removal or work aforesaid of or upon such dwelling house, building, machinery, structure or work; shall also be prior to any unrecorded mortgage given before the commencement of such construction, repairs, removal or work, of which mortgage the person claiming the lien has no notice, and shall also attach to and be lien upon the real property of any person upon whose premises such improvements are made, such owner having knowledge thereof and consenting thereto, and may be enforced as provided in this chapter.

* * * * *

Every person who, as principal contractor, does or causes or procures to be done any manual labor on land, for the purpose of preparing such land for use as such, shall have a like lien upon such land, subject to the same provisions and attaching to the same interests as the lien hereinbefore provided for. And whenever the doing of any such manual labor shall consist of the building of a continuous roadbed, structure or plant designed or intended for use as, or as part of, a single thing, and such roadbed, structure or plant is not limited in extent to one acre of land in or partly in a city or incorporated village or to forty acres of land wholly or partly outside the same; but extends over and across more than one acre, wholly or partly within such city or village, or more than forty acres, whether within or without or partly within and partly without such city or village, then and in every such case the limitation to one acre or forty acres, as the case may be, shall not apply, but the party entitled shall have a lien upon all the interests of the owner in and to the whole of said continuous roadbed, structure or plant and the whole of his land on which the same

is constructed or which is intended to be used or is used for the purpose of such road-bed, structure or plant; and the claimant may make and file a single petition or claim for a lien on all the same, which petition or a copy thereof shall be filed in the office of the clerk of the circuit court of each county in which such road-bed, structure or plant is situate or partly situate, and such lien may be foreclosed or enforced in the circuit court of any of the said counties in which the said claim or petition is so filed, and in the enforcement thereof the said road-bed, structure or plant, if sold, shall be sold as one continuous and single thing. And whenever the doing of any work or labor * * * for which a lien is given by this section shall consist of the grading, filling or leveling of land, or the grading, graveling or making of any street, alley, roadway or gutter thereon or thereover, where such land is situated within the limits of a city or incorporated village and said * * * work done upon more than one acre under a contract for the improvement of more than one acre, in the manner aforesaid, then and in every such case the limitation to one acre shall not apply, but the party entitled shall have a lien upon all the land upon which said work is done, * * * and may make and file a single petition or claim for a lien on all of the same; provided, that the lien given for grading, filling or leveling land, or grading, graveling or making any street, alley, roadway or gutter thereon or thereover shall not exist when such work is done * * * is furnished under contract with or by direction of any city or village.

(This section shall not be construed as giving a lien upon the interests of any owner in land where the work or labor is done, * * * at the request of any person holding such land under any contract of lease, demise, or contract for the sale thereof, with such owner unless there shall also be an express agreement between such owner and the person doing such work or labor * * * whereby such owner has agreed to pay for or become responsible for the payment of the same, but such lien shall affect the interests only of the person holding the land under such contract of lease, demise or sale.)

An assignment of his claim or right to a lien or any part thereof by the contractor or garnishment by his creditor shall not operate to compel the owner to pay the assignee or creditor until the claims of subcontractors and employees under section 3315 shall either have matured by notice or expired by lapse of time. If such claims, under section 3315, become liens the owner shall be compelled to pay such assignee or creditor only what may remain due in addition to such liens.

Priority of Liens.—Mechanics lien is subordinate to a mortgage upon land on which building is situate and recorded before building was commenced. *Jessup v. Stone*, 13 Wis., 466.

Lien for labor or materials takes precedence of liens of any other kind attaching subsequent to commencement of building. *Hall v. Hinckley*, 32 Wis., 362.

One who furnishes materials and performs labor by filing his claim for a lien acquires a priority over another party who subsequently does the like acts on

the same property and for the same person without filing such a claim but who instead takes a chattel mortgage of the apparatus and fixtures covered by his mortgage and removed from the premises by him. *Kendall Mfg. Co. v. Rundle*, 78 Wis., 150.

LIENS. SUB-CONTRACTOR'S AND LABORER'S; CLAIM; CONTRACTOR TO DEFEND AGAINST; AMOUNT DUE MAY BE WITHHELD.—FRAUDULENT PURCHASE.

Section 3315. Every person who, as a sub-contractor of a principal contractor or as an employee of either, performs any work or labor for * * * either in any of the cases mentioned in the preceding section may have the lien and remedy given by this chapter if, within sixty days after performing such work or labor * * * he shall give notice in writing to the owner, or his agent, of the property to be affected by such lien, if to be found in the county, and if neither can be found therein, by filing such notice in the office of the clerk of the circuit court of said county, setting forth that he has been employed by such principal contractor or sub-contractor to perform, * * * and has performed, * * * such work, labor, * * * with a statement of the labor performed * * * the amount due therefor from such principal contractor or sub-contractor, and that he claims the lien given by this chapter. In all cases where a lien shall be filed under the provisions of this chapter by any person other than the principal contractor it shall be his duty to defend any action brought thereupon at his own expense, and during the pendency of such action the owner may withhold from the contractor the amount of money for which such lien shall be filed; and in case of judgment against the owner or his property upon the lien he may deduct from any amount due by him to the contractor the amount of such judgment and costs, and if he shall have settled with the contractor in full may recover from him any amount so paid for which the contractor was originally liable.

* * * * *

Principal contractor.—Notwithstanding a contract for repairs on a house is made by the owner thereof with an individual, if such individual subsequently becomes a member of a firm and the firm fully performs the contract with the owner's knowledge, and third parties deal with them as principal contractors, they are such although the owner refuses to change the contract by substituting the firm name for the individual name. *Van Horn v. Van Dyke*, 70 N. W. Rep. 1067.

To validity before notice.—The employer, under an agreement that the contractor is to furnish materials and do the work is not liable to another who furnished work or materials for the contractor until the notice required is given by the latter to him; and a payment without consent of contractor is not valid. *Walker v. Newton*, 53 Wis., 330.

But where the employer promises the person who does the work and furnishes materials and he acts on the faith of such promise, former is bound as original promisor to pay therefor. *Willer v. Bergenthal*, 50 Wis., 474.

LIENS. CLAIMS ASSIGNABLE; NOTICE; PRIOR PAYMENT.

Section 3316. All claims for liens and rights of action to recover therefor under this chapter shall be assignable so as to vest in assignee all rights and remedies herein given, subject to all defenses thereto that might be made if such assignment had not been made. Notice in writing of such assignment, together with a copy thereof, shall be served upon the owner of the property affected by such claim for lien within fifteen days after such assignment is made; and all payments made by such original owner, before service of such notice of assignment, shall discharge his original debt to the amount so paid.

The assignment of the claim carries with it the remedy given by sec. 3323; *Bank of Iron River v. School Directors*, 91 Wis., 596.

LIENS. TAKING NOTE NOT A WAIVER.

Section 3317. The taking of a promissory note or other evidence of indebtedness for any such work, labor or materials done or furnished shall not discharge the lien therefor hereby given unless expressly received as payment therefor and so specified therein.

Effect of taking note.—Lien is not waived by taking note unless time of payment is extended beyond time in which action is required to be commenced: *Balley v. Hall*, 11 Wis., 289. The statute does not apply where the note is expressly received in payment. *McCoy v. Quick*, 30 Wis., 521.

Note of a third person.—The acceptance of the note of a third person for the amount due for labor and materials does not discharge the lien unless it was expressly received in payment. The debtor has the burden of showing, by direct and positive proof, that the creditor agreed to so receive it. No presumption arises that it was so received because the original accounts were receipted as paid in full. *Allis v. Meadow S. Distilling Co.*, 67 Wis., 16.

LIENS. FILING CLAIM AND BEGINNING ACTION.

Section 3318. No lien hereby given shall exist and no action to enforce the same shall be maintained unless within six months from the date of the last charge for performing such work and labor * * * a claim for such lien shall be filed as hereinafter provided in the office of the clerk of the circuit court of the county in which the lands affected thereby lie and such action be brought within one year from such date, unless within thirty days next preceding the expiration of such year the person who filed the lien or his agent, attorney or assignee shall make and annex to the instrument on file an affidavit setting forth the interest which the lien claimant has by virtue of such lien in the property therein mentioned, upon which affidavit the clerk shall endorse the time of its filing. The effect of such affidavit shall continue beyond one year from the time when such lien would otherwise cease to be valid. Such claim for lien may be filed and docketed

within such six months notwithstanding the death of the owner of the property affected thereby or the person with whom the original contract was made, with like effect as if he were then living.

Parties are not barred of all rights under the lien law where work on the buildings is permanently stopped or abandoned without their fault. *Catlin v. Douglas*, 33 Fed. Rep., 569.

LIENS. CLAIM FOR LIEN.

Section 3320. Such claim for lien shall contain a statement of the contract or demand upon which it is founded, the name of the person against whom the demand is claimed, the name of the claimant or assignee, the last date of the performance of labor * * * * description of the property affected thereby, a statement of the amount claimed and all other material facts in relation thereto. It shall be signed by the claimant or by his attorney, and need not be verified, and may be amended, in case of action brought, by order of the court as pleadings may be.

A statement in gross of the labor done and materials furnished by a sub-contractor is sufficient if it is the same as the contract between him and the principal contractor: the contract being annexed and filed with it. *Leeds v. Little*, 42 Minn., 414.

The name of the person.—Failure to state name of owner of building against which lien is sought to be enforced is fatal and the omission cannot be aided by the other papers in the case or by extrinsic evidence. *Matter v. Falcon Mining Co*, 18 Nev., 209.

LIENS. FORECLOSURE OF LIEN; PARTIES.—EFFECT OF CHANGE OF VENUE.

Section 3321. Any person having so filed such claim for a lien may foreclose the same by action in the circuit court or any county court having jurisdiction thereof. All persons having filed such claims for liens for work done * * * in the cases mentioned in sections 3314 and 3315 may join as plaintiffs; and if any do not so join or refuse to so join they may be made parties defendant. All persons having liens upon the premises by mortgages, judgment or otherwise, subsequent to the lien sought to be foreclosed, and all purchasers of the premises subsequent to such lien may be joined as parties defendant. In case any person who has filed such claim for lien prior to the commencement of such action, or who has such subsequent lien, or who is such subsequent purchaser, is not made a party to such action he may, upon application at any time before judgment, be made a party defendant thereto, and any person who shall file such claim for lien after the commencement of such action or who shall obtain such subsequent

lien by mortgage, judgment or otherwise, or become such subsequent purchaser after the filing of the notice of the pendency of such action, may, at any time before judgment, upon application, be made a party defendant thereto. If such action be brought by a sub-contractor the principal contractor may also be made a party defendant thereto. When the place of trial is changed all subsequent proceedings, including the bringing in of new parties, shall be had in the county to which such change is made.

Jurisdiction.—Justices of the peace have no jurisdiction of proceedings to enforce mechanics liens. *Myer v. Gleisner*, 7 Wis., 55; *Noss v. Cord*, 1 Wis., 388.

Where petition is addressed to clerk of county instead of clerk of circuit court it does not affect jurisdiction of former over action commenced therein to enforce the lien. *Challoner v. Howard*, 41 Wis., 355.

Parties.—Though the judgment demanded does not affect the interests of the wife of the defendant in the premises nor ask a personal judgment against her, she is a proper if not a necessary party to the action. *Hausmann Bros. Mfg. Co. v. Kempfert*, 93 Wis., 587.

LIENS. COMPLAINT.

Section 3322. The complaint in such actions shall be sufficient if it set forth the substance of the contract under which such work was done * * * with the last date of doing * * * the same, and the assignment of the claim, if any, and allege that the plaintiff or his assignee has filed a claim for a lien therefor, as required by law, giving the date of such filing, that such work was done * * * for some of the purposes mentioned in section 3314, stating for what particular purpose, the amount claimed to be due the plaintiff or plaintiffs respectively, and give a description of the premises claimed to be affected by such lien; as to defendants who have filed claims for liens on said premises under the provisions of this chapter, that they have filed such claims, giving the date of filing and the amount claimed by each; as to defendants having subsequent liens or being subsequent purchasers, that they have or claim to have some lien upon or interest in the premises, subsequent and subject to the lien of the plaintiff, and shall demand judgment that the rights of all persons having filed claims for liens upon such premises, whether plaintiffs or defendants, be ascertained and adjudged and that the interest of the person owning such premises at the time of the commencement of the work * * * for which the lien is claimed or which he or any other person claiming under him has since acquired be sold to satisfy the amount of the liens so ascertained and adjudged, with costs of the action. If the action be brought by a sub-contractor or employee the complaint shall also set forth in substance the contract between him and the contractor

and allege that he gave the notice required by section 3315, and the date of the service thereof.

The complaint.—Though the complaint does not state that the debt is due, if that fact is alleged in the petition which is embodied in and made part of it, nothing more is required. *Husc v. Washburn*, 59 Wis., 414.

The complaint should state, independently of the petition, all the facts necessary to show a cause of action, describe the property and allege that materials were furnished and used by defendant upon property which he had an interest in. *Shaw v. Allen*, 24 Wis., 563.

LIENS. JUDGMENT.

Section 3324. The judgment in such action shall adjudge the amount due to the plaintiff, or in case several claims for liens are embraced in the action the amount due to each claimant who is a party to the action. It shall direct that the interest of the owner in the premises at the time of the commencement of the work * * * for which liens are given, or which he or any person claiming under him has since acquired, or so much thereof as may be necessary, be sold to satisfy the amount of the lien of the plaintiff or of the several liens embraced in the action, with the costs of such action, including the cost of filing the claims for liens; and that, after satisfying the same, together with such costs, the residue of the proceeds be brought into court with the report of sale to abide the order of the court. If the premises can be sold in parcels without injury to or to the advantage of the parties the court may adjudge that the sale be so made. If the plaintiff in any action fail to establish his lien upon the premises described in his complaint and claim for lien, but establish a right to recover upon contract for his alleged work and labor done * * * he may have a personal judgment in the action against the party liable for the amount due him, with or without costs, to be taxed in his favor or in favor of the defendant in like manner as if the action were for the recovery of money only.

Costs.—Employer who neglects to pay sub-contractors is liable for cost of suit after notice of claim. *Weston v. Olson*, 55 Wis., 613.

On recovering the plaintiff is entitled to full costs. *Badger v. Daenicke*, 56 Wis., 678.

LIENS. DISTRIBUTION OF PROCEEDS OF SALE.

Section 3325. From the proceeds of such sale the several claimants whose liens were established and adjudged in the action shall be paid equally and alike, without priority among themselves; and if the sum realized at such sale shall be insufficient, after paying the costs of the action and the costs of making the sale, to pay the full amount adjudged to be due all such claimants, then the same shall be dis-

tributed and paid to each of them in the proportion which the sum adjudged to each bears to the whole amount adjudged to all, and the judgment shall so direct.

LIENS. SALE; NOTICE AND REPORT OF; WRIT OF ASSISTANCE.

Section 3326. All sales under such judgments may be made by the sheriff or a referee appointed by the court for that purpose, who shall give notice thereof in the manner provided by law for the sale of real estate upon execution, unless the court shall order other or different notice to be given, and shall be absolute and without redemption; and the deed given thereon, in case such sale is confirmed, shall be effectual to pass to the purchaser all the interest in the premises directed to be sold. Such sheriff or referee shall, within ten days after making such sale, file with the clerk of the court in which the judgment is rendered a report of the sale for confirmation thereof and shall, immediately after the sale, pay to the parties entitled thereto the amounts adjudged to them respectively, after deducting the costs thereof, unless otherwise ordered by the court. If any deficiency arise upon such sale in the payment of the sums adjudged to be due to any such claimant of a lien given by this chapter the sheriff or referee shall specify the amount of such deficiency in his report, and if demanded in the complaint or in the answer of any such lien claimant the court, upon confirming such sale, may render judgment therefor against the defendant legally liable to pay the same, which judgment may be docketed and enforced in the same manner that ordinary judgments are, and the purchaser or purchasers at such sale shall be entitled to a writ of assistance to obtain possession of the premises sold in the same manner as is provided in section 3025.

LIENS. SATISFACTION OF.

Section 3327. Every person who has received satisfaction or tender of his debt, with the costs of any action brought thereon or of any judgment recovered therefor, for which he has filed any such claim for lien, shall, at the request of any person interested in the premises affected thereby or in having such lien removed, on payment of the costs of satisfying the same, execute and deliver by him or his attorney the necessary acknowledgment of satisfaction thereof; on filing which with the clerk of the court with whom such lien is docketed such clerk shall enter satisfaction of such claim; or the lien claimant may enter the same satisfied on the docket of such lien. On failure to so execute and deliver such acknowledgment of satisfaction or to so satisfy such lien on the docket the person refusing shall be liable to pay to the person requiring such acknowledgment a sum equal to one-half of the sum claimed in his claim for lien, to be recovered by action.

LIENS. AGAINST MUNICIPALITIES; PARTIES; JUDGMENT.

Section 3328. Any sub-contractor who has done work or labor * * * * to any principal contractor for the construction, repair or removal of any building or machinery for any county, town, city, village or school district may maintain an action therefor in the county in which such work, labor * * * were done * * * against such principal contractor and such county, town, city, village or school district, jointly for the recovery thereof.

Amount of recovery; payment.—A sub-contractor for the erection of a school house can recover from the district only an indebtedness of the contractor to him to the amount due such contractor when action is commenced or tried. In such action the question whether the court erred in ruling that burden was on the plaintiff to show that district had not paid sum due to principal contractor is immaterial, where it appears from plaintiffs' evidence that it was fully paid. Payment in school orders, though some of them were left with district clerk to pay debts of contractor to third persons was sufficient appropriation. *Radczuk v. School District*, 42 Wis., 397; *Bank of Iron River v. School Directors*, 91 id., 596.

LIENS. UPON LOGS, TIMBER, ETC.

Section 3329. Any person who shall do or perform any labor or services in cutting, hauling, running, felling, piling, driving, rafting, booming, cribbing, towing, sawing, peeling or manufacturing into lumber or timber any logs, timber, stave-bolts, staves, pulp wood, cord wood, railroad ties, piling, telegraph poles, telephone poles, fence posts, paving timber, tan or other barks, or in preparing wood for or manufacturing charcoal, shall have a lien upon such material for the amount due or to become due for such labor or services, which lien shall take precedence of all other claims, liens or incumbrances thereon or sales thereof, whether such claims, liens, incumbrances or sales are made, created or accrue before or after the time of doing such work, labor or services.

Rule of construction.—Statutes giving a lien for services upon logs and timber should be liberally construed in the interest of labor. *Joenbeck v. Hewitt*, 61 Wis., 96; *Kollock v. Parcher*, 52 id., 373; *Lohman v. Peterson*, 87 id., 227.

Do or perform any labor or services.—One employed by the month as a scaler of logs by the person who sells them or by the buyer of them, or by both jointly, may also be employed by the former to assist in loading them, and may have a lien for the latter service as well as for scaling, as against the vendee, provided, his services in loading did not interfere with his duties as scaler: *Kilac v. Comstock*, 67 Wis., 473.

Performing manual labor upon lumber does not mean making lumber out of logs by sawing, for which there is a lien at common law. If it does apply to such labor it is an extension of the common law remedy to one who has voluntarily parted with possession of the property. *Arians v. Brickley*, 65 Wis., 28.

Gathering and caring for the peavies and tools used in driving logs, at the conclusion of the drive, is an essential part of the work, and the time employed in

doing so is a part of the time for which a lien may be claimed. *Minton v. Underwood L. Co.*, 79 Wis., 648.

Liability of purchaser.—A bona fide purchaser who buys lumber upon which the labor has been performed without actual or constructive notice of the claim for a lien is not liable therefor. *Smith v. Shell Lake L. Co.*, 68 Wis., 89. But under sections 1, 4, chap. 139, 1891, such a purchaser though he pays full value and transportation charges, is not entitled to protection against the claim for a lien. *De Morris v. Wilbur L. Co.*, 74 N. W. Rep., 105.

LIENS. PETITION FOR; WHEN AND WHERE FILED.

Section 3330. No debt or demand for such labor or services shall become a lien upon the material mentioned in the preceding section unless a petition therefor in writing shall be made and signed by the claimant and verified by him or by some one in his behalf, under oath, setting forth the nature of the debt or demand for which the lien is claimed, the amount claimed to be due, a description of the property upon which such lien is claimed and an averment that the petitioner claims a lien thereon pursuant to law. Such petition shall be filed in the office of the clerk of the circuit court of the county in which such labor or services or some part thereof were done or performed. If the labor or services for which such lien is claimed be performed between the first day of November and the first day of May following or if such labor or services be commenced on a day prior to the first day of November and be continuous to a day between that and the first day of May the petition for the lien shall be filed on or before the first day of June next thereafter; and if such labor or services shall have been done or performed after the first day of May and shall terminate before the first day of November, or if the doing or performing of such labor or services shall be continuous from the first day of November or a day prior thereto to a date beyond the first day of May following, and in all other cases the petition for a lien shall be filed within thirty days after that last day of doing or performing such labor or services, and such labor or services shall be deemed continuous notwithstanding a change of ownership in the property on which such lien is claimed. The clerk with whom such petition for a lien is filed shall receive twenty-five cents for filing the same.

Time of filing lien.—The word "between" in the clause "between the first day of November and the first day of May following" is used inclusively, and the word "from" in the clause "shall be continuous from the first day of November" is also so used. Hence in order that a claim may be effective where the services are continuous they must have been begun on or before Nov. 1 and continued after May 1 or the claim must be filed as the section otherwise requires. *McGinley v. Laycock*, 94 Wis., 205.

The petition may be made by one partner for and on behalf of the firm, and is not vitiated because it claims the lien for a sum due to "him" instead of "them," *Garland v. Hickey*, 75 Wis., 178.

LIENS. ACTION TO ENFORCE; PARTIES; COSTS; CHANGE OF VENUE.

Section 3331. All actions to enforce any such lien, except as hereinafter provided, may be brought in the circuit court of the county where the petition thereof is filed, when the amount claimed, over and above all legal set-offs, exceeds one hundred dollars, or before any municipal court or justice of the peace having jurisdiction of the amount claimed in the county in which such petition is filed. Actions may be commenced to enforce and foreclose any such lien if the amount owing for such labor or services shall then be due, immediately after the filing of such petition for lien, and such claim for labor or services shall cease to be a lien on the property described in such petition unless an action to foreclose such lien be commenced within four months after filing such petition. If the claim be not due at the time of filing such petition the time when the same will become due shall be stated therein and in such case such claim shall not cease to be a lien on the property described in the petition until thirty days after the claim shall have become due; provided, that such claim shall continue a lien upon the property so described in all cases for four months after the filing of such petition. Where the property subject to such lien has been transported or taken from the county where such work was done the person in whose favor such lien exists may bring an action to foreclose the same in any county where said property may be found. In all actions brought to foreclose such liens the person, company or corporation liable for the payment of such debt or claim shall be made the party defendant and any person claiming to own or have any interest in such property may be also made a defendant, but shall not be held personally liable for any costs unless he defends the action. In actions appealed from municipal or justice court no change of venue shall be allowed except for prejudice of the judge or of the people.

LIENS. ATTACHMENT, AFFIDAVIT FOR; UNDERTAKING;
SERVICE OF WRIT.

Section 3332. The plaintiff in such action may have the remedy by attachment of the property upon which the lien is claimed as in personal actions; such attachment may be issued, served and returned and like proceedings had thereon, including the release of any attached property, upon giving an undertaking in such sum as may be fixed by the court or judge for the payment of the amount which may be finally determined to be a lien on the property. The affidavit for the attachment must state that the defendant, who is personally liable to the plaintiff therefor, is indebted to him in the sum

named, over and above all legal set-offs, for such labor or services done or performed as entitles the plaintiff to a lien thereon, describe the property on which it is claimed such work was done or services were performed and aver that the plaintiff has filed his petition for a lien pursuant to law; but no other fact need be stated therein. No undertaking upon such attachment or security for costs in actions hereunder before municipal courts or justices of the peace need be given unless upon application of some defendant in the action showing by affidavit that he has a good and valid defense to the plaintiff's claim, and no order shall be made by any circuit court or any judge thereof requiring the giving of an undertaking or security for costs except upon ten days' notice to the plaintiff. The writ of attachment shall direct the officer to whom it is issued to attach the property described or so much thereof as shall be necessary to satisfy the sum claimed to be due thereon and to hold the same subject to further proceedings in the action. The officer executing such writ shall make return thereon of his doings in the premises, but it shall not be necessary for him to make and serve an inventory or appraisal of the property attached; he shall also pay any charges that may be due for booming or driving the property attached, and the amount so paid shall be taxed as a part of the costs of the action. In actions in the circuit court, where personal service of the summons and writ of attachment cannot be made upon the defendant, service shall be made as provided by law for service of summons on non-residents or persons who cannot be found as in other actions in such court, and if the action be in justice's or municipal court and the defendants cannot be found the provisions of law relating to service of attachment upon non-residents or persons who cannot be found in other action in such courts, shall govern and apply to such action to foreclose a lien.

Remedy by attachment.—An action will not lie against an officer to recover possession of goods seized by virtue of a writ of attachment issued to enforce a laborers' lien. *Griffith v. Smith*, 22 Wis., 646; *Battis v. Humlin*, id., 669.

Attachment under lien law is paramount to one under the general statute for an ordinary debt. *Halpin v. Hall*, 42 Wis., 176.

Indemnity.—It seems that the sheriff may demand indemnity of the plaintiff without an order requiring him to give it. *Halpin v. Hall*, 42 Wis., 176.

LIENS. CLAIMS AND ORDERS ASSIGNABLE.

Section 3333. When more than one person has a claim for a lien upon the same property any person having such a claim may have assigned to him in writing the debt or claim of the other, subject to all set-offs to said claim against the original owner, and may file a petition for his own lien and for the claims for liens so assigned to him and bring an action to enforce the same in his own name; but such petition shall al-

lege such assignment. Any time check or time order signed and given by any employer to any employee for performing any labor or services or any claim therefor for which a lien is given by section 3329 shall be assignable, and the assignment thereof shall give to the assignee all the right to a lien and to the enforcement thereof which the assignor might have exercised but for such assignment.

One who has a lien upon logs for labor performed upon them may, with the debtor's assent, assign part of his claim to another person who has a like lien; and the latter may enforce the lien for the part thus assigned together with his own lien, against the debtor's vendees. *Kline v. Comstock*, 67 Wis., 473.

Judgment in lien suit is assignable. *Winslow v. Urquhart*, 44 Wis., 197.

The assignment of a claim for which the assignor may have by law a specific lien, before action, destroys the right to the lien, and a re-assignment to him does not revive the lien. *Tecksbury v. Brownson*, 48 Wis., 581; decided under Ch. 154, 1874.

LIENS. NOT DISCHARGED BY TAKING NOTE.

Section 3335. The taking of a promissory note or other evidence of debt for any such labor or services done or performed shall not discharge the lien therefor hereby given unless expressly received in payment therefor and so specified therein.

LIENS. LIABILITY ON CHANGE OF PROPERTY.

Section 3336. If any property upon which a lien is claimed under the foregoing provisions shall, during the pendency of the claim therefor, be transported out of this state, secreted, destroyed, sold, incumbered or so changed in character by intermingling it with other property as to prevent the property upon which the lien is claimed from being subjected to the satisfaction of the lien, the owner of such property and every purchaser thereof or the person acquiring any interest therein during the pendency of such claim shall be liable to the lien claimant for the amount which may be adjudged to be due him, which amount may be recovered against any such person in a personal action; provided the petition for a lien is filed in accordance with law and an action to foreclose the same is begun within the time limited therefor.

LIENS. COMPLAINT.

Section 3339. The complaint in any action to enforce a lien given upon any material mentioned in section 3329 shall, in addition to the ordinary allegations in actions upon contracts, allege the filing of the petition for a lien as hereinbefore provided, and such allegation shall be taken to be true unless expressly denied by the defendant or some one in his behalf in an affidavit or verified answer, and shall contain a description of the property upon which a lien is claimed, and if any part of the claim has been assigned to the plaintiff that fact shall be alleged.

LIENS. FINDINGS; COSTS; EXECUTION.

Section 3340. The court or jury which tries any action hereunder shall, in addition to the sum due the plaintiff, find, if such be proven, that the same is due for the labor or services performed or some part of them as alleged in the complaint, and that the same is a lien upon the property or some part thereof described therein, and the judgment shall be in accordance with the findings. Costs shall be taxed and allowed as in personal actions, including an attorney's fee of ten per cent. of the claim, but in no case shall such fee exceed ten dollars. The execution in addition to the directions and commands of ordinary executions upon judgments for money, shall direct that the property upon which the lien is found to exist or so much thereof as may be necessary for such purpose to be sold to satisfy said judgment, costs and attorney's fee, including the costs of sale. If the court or jury find that the amount due the plaintiff is not a lien upon any part of such property it shall be released from the attachment if it has been attached. The plaintiff shall in such case have judgment for the amount so found due, with costs, as in ordinary civil actions, but he shall not recover the costs of executing such attachment.

Judgment.—If the complaint in an action in justice's court fully describes the logs a judgment that the amount found due the plaintiff is "a lien upon the logs described in the complaint" is sufficient. *Paulson v. Ingersoll*, 62 Wis., 312.

LIENS. WHO MAY BECOME A PARTY OR APPEAL.

Section 3340a. In any action for the enforcement of a lien upon any of the property mentioned in section 3329 any person not a party thereto may, at any time before or after judgment and before an actual sale of the property upon which a lien is claimed, become a party defendant by filing with the clerk of the court where such action is pending, or with the justice of the peace in actions pending in a justice court, an affidavit made by such person or in his behalf to the effect that he is the owner of or of some interest in the property upon which a lien is claimed and verily believes that said claim for lien is unjust and invalid; upon filing such affidavit he may defend said action so far as a claim for a lien is concerned, and in case judgment has been previously rendered for a lien he may appeal within twenty days after the filing of such affidavit as in other cases; provided, that his right to file an affidavit or take an appeal shall not extend beyond one year from the date of the rendition of the judgment.

Costs.—One who successfully defends an action to enforce a lien is entitled to a judgment for costs; but one who is unnecessarily made a defendant and who does not appear is not so entitled. There is no injustice done the plaintiff by awarding both the defendants costs jointly, the amount which he is bound to pay not being increased thereby. *Abraham v. Agnew*, 83 Wis., 246.

LIENS. APPEAL BY INTERVENER AND PROCEEDINGS.

Section 3340b. Such appeal shall not stay execution unless the appellant files an undertaking, with two or more sureties, who shall each justify in a sum equal to double the amount of the judgment, conditioned that if the plaintiff establish his right to a lien on such property they will pay the amount of the judgment in his favor with costs; said undertaking shall be approved by the judge of the court to which the appeal is taken; and upon filing it all proceedings upon the judgment appealed from shall be stayed during the pendency of such appeal, and in case execution shall have been previously issued the same shall, upon presenting to the officer in whose custody it may be a certified copy of such affidavit and undertaking and certificate of the justice or clerk of the court that an appeal has been perfected, be returned, and all property in which appellant shall claim an interest that may have been levied upon shall be released from such levy. If upon the trial in the appellate court the plaintiff shall recover judgment of lien upon such property such judgment may be entered against the appellant and his sureties; but if the plaintiff does not establish his right to a lien the appellant shall recover judgment for costs. When the judgment to be appealed from is rendered in justice's court and by reason of the death of the justice who rendered it or any other cause the affidavit and undertaking cannot be presented to him they may, with notice of appeal and affidavit upon appeal, be filed with the clerk of the court to which such appeal is taken within the time aforesaid.

LIENS. COOK'S LIEN.

Section 3341. All persons performing any labor or services by cooking or manufacturing food for men while they are performing labor or services upon any property mentioned in section 3329, at the request of the person employing the men for whom such food is cooked or manufactured, shall be deemed to have performed labor or services upon such property and shall have the right of lien therefor the same as the men for whom such food was cooked or manufactured. The right of lien given upon such property shall survive any change in the nature thereof by reason of any process of manufacturing, and all persons who may claim such right under the provisions of this chapter shall have the right of lien upon the manufactured product as though the labor had been performed directly upon the same.

LIENS. FOR LOG DRIVING ON THE CHIPPEWA RIVER.

Section 3342a. In enforcing claims for driving logs on the Chippewa river and its tributaries or any part thereof it shall be a sufficient fil-

ing of the lien petition if it is filed in the office of the clerk of the circuit court for Chippewa county. In case the driving of any mark of logs is not completed the first season and the work of driving said logs is done during a subsequent season a notice may be filed in said office within thirty days after the last work is done the first season, stating that a lien is claimed for driving said logs and the amount thereof and such filing shall preserve the lien until thirty days after the last work is done in driving said mark of logs the subsequent season. At any time within thirty days after such work is done the last season a petition for a lien may be filed in the office of said clerk, which may include all claims for driving said mark of logs during both seasons, in case the notice shall have been filed as aforesaid. An action to enforce such lien for driving may be commenced in Chippewa county at any time within four months after the petition is filed for such lien, and such lien shall extend to all the logs of the mark to which it relates. The provisions of the next following section shall apply in all such cases except as is otherwise provided herein.

LIENS. LEVY, HOW MADE; EFFECT OF—PURCHASER'S LIABILITY.

Section 3342b. In actions to enforce liens on logs or timber which have been marked the officer having the writ of attachment or execution shall make his levy by endorsing on or annexing to the writ his certificate reciting that by virtue of said writ he has levied on the logs or timber described therein, specifying the number of feet, as near as may be levied upon, the sum due the plaintiff, including costs and disbursements, and by filing a certified copy of the writ and certificate in the office of the lumber inspector who scaled the logs; provided, that when a levy is made by virtue of a writ of attachment in the action no further levy after judgment shall be necessary, but such levy shall continue until the lien is satisfied; and provided further, that in actions to enforce liens on logs cut to be banked on the Chippewa river or any of its tributaries, except the Eau Claire river, where the logs have been marked, a certified copy of the writ of attachment or execution and of the officer's certificate shall be filed in the office of the clerk of the circuit court of Chippewa county and that if the petition for a lien is not filed in said office the levy shall not be complete until such copy is filed therein. Said clerk and lumber inspector shall each be entitled to fifteen cents for filing the copy of such writ and certificate. When a levy is made in such manner the officer who made it shall be deemed to be in the possession of the number of feet of said mark of logs or timber specified in such certificate, and if a sale of such logs or timber is made it shall not be necessary for the officer making it to be in view thereof. Any person who saws, buys or uses any of the mark of logs or timber so levied on before the lien claim

is satisfied shall be liable to the lien claimant or officer making the levy or holding the writ for the amount claimed therein, together with costs and disbursements. The person purchasing at the officer's sale may claim the amount of logs or timber by him purchased from said mark wherever the same may be found or may recover the value thereof from any person who shall have sawed or otherwise used any of said logs or timber subsequent to the levy thereon.

LIENS. ON MINING AND SMELTING PROPERTY.

Section 3342c. Any person who shall perform any labor or services for any person or corporation engaged in or organized for the purpose of mining, smelting or manufacturing iron, copper, silver or other ores or minerals, and any bona fide holder of any draft, time check or order for the payment of money due for any such labor, issued or drawn by any such person or corporation, shall have a lien for the wages due him for the amount due on such draft, check or order upon all the personal property connected with such mining, smelting or manufacturing industry belonging to such person or corporation, including the ores or products of such mine or manufactory, together with the machinery and other personal property used in the operation of such mine or manufactory and all the interest of such person or corporation in any real estate belonging thereto and connected with such business, which said lien shall take precedence of all other debts, judgments, decrees, liens or mortgages against such person or corporation, except liens accruing for taxes, fines or penalties, subject to the exceptions and limitation hereinafter set forth.

Retroactive effect.—Statutes giving liens are not given a retroactive effect unless the legislative intention that they should have such effect is clear. If labor has been done before a lien was given and part payment has been made afterward, no part of the sum paid will be applied on the debt secured by the lien except where payments exceed the debt due for labor performed before there was a right to a lien. *Hunter v. Savage Mining Co.*, 4 Nev., 153; 9 Morrison's Minn. Rep., 357.

Law part of contract.—The law in force at the time a contract is made and labor performed under it is a part of the contract. The repeal of the law after the performance of labor but before the notice has been filed does not defeat the lien. *In re Hope Mining Co.*, 1 Sawyer, 710; 9 Morrison's Minn. Rep., 364.

LIENS. EXTENT OF; FILING CLAIM.

Section 3342d. Such lien shall extend only to the amount of the interest in the real property held by such employer or employers, and in case of his or their death or insolvency, or of the sale or transfer of such works, mines, manufactories or business, or his or their interest therein by execution or otherwise, all moneys that may be due for wages to any miner, mechanic or laborer shall be a lien upon all

said property and shall be preferred and first paid out of the proceeds of the sale thereof; provided, that no such claim shall be a lien upon any real estate unless it shall be filed in the office of the clerk of the circuit court of the county in which the real estate upon which a lien is claimed is situated within sixty days after the claim, draft, time check or order is due and payable in the manner claims for mechanics' liens are required to be filed.

Preference; what work.—A statute provided: "And all liens herein provided for shall be preferred to every other lien or incumbrance which shall attach upon any property subsequent to the time when work or labor was commenced." The court ruled that the words "the work or labor" do not mean any work that may be done provided that it be continuous from a date prior to notice of a mortgage though partly under contracts made after notice thereof, but that they mean work already contracted for before notice of the mortgage. *Capron v. Stout*, 11 Nev., 304; 9 Morrison's Min. Rep., 391; *Soule v. Dawes*, 14 Cal., 247, 7 Id., 575.

The claim.—If work is done by the day and alternated with contracts to do small quantities of work by the piece the transaction may be regarded as continuous and a single claim for a lien will be good: *Skyrme v. Occidental M. Co.*, 8 Nev., 219; 9 Morrison's Rep., 370. Where work had been continuous the notice of lien is good if filed within sixty days after the last work is performed although it has been done under various contracts. *Capron v. Stout*, 11 Nev., 304; 9 Morrison's Min. Rep., 391.

LIENS. SATISFACTION OF.

Section 3342e. If an attachment, execution or similar writ shall be issued against any person or corporation engaged in such business as is within section 3342c, any miner, laborer, mechanic or other person who is entitled to claim a lien thereon may give notice in writing of such claim and the amount thereof, verified by affidavit, to the officer holding any such writ at any time before the actual sale of the property affected thereby, and such officer shall retain out of the proceeds of such sale a sufficient sum to satisfy all such claims, which sum shall be held by him, subject to such order as the court may make.

LIENS. EFFECT OF MORTGAGE.

Section 3342f. No mortgage or other instrument by which a lien is created shall operate to impair or postpone the lien and preference given and secured to the wages and moneys mentioned in section 3342c, provided, that no lien of any mortgage or judgment entered before such labor is performed shall be affected or impaired by such lien.

LIENS. FORECLOSURE OF.

Section 3342g. The liens and preferences given by the four preceding sections may be foreclosed in the same manner as mechanics' liens, and all provisions of these statutes relating to the foreclosure thereof

shall apply to the foreclosure of the liens so given, so far as such provisions are applicable.

Assignment of liens.—It is probable that liens under this act are assignable. In Nevada the assignee of several lien claims may foreclose them all in one action. Informalities in an assignment will not be regarded. If a sufficient assignment is made after suit brought it cannot aid an insufficient one previously made; *Skyrme v. Occidental M. Co.*, 8 Nev., 219; 9 Morrison's Minn., Rep., 370.

LIENS. MECHANICS.

Section 3343. Every mechanic who shall make, alter or repair any article of personal property at the request of the owner or legal possessor of such property shall have a lien thereon for his just and reasonable charges therefor, and may retain possession of such property until such charges are paid.

Waiver.—An unconditional delivery to the owner of property on which a lien has accrued is a waiver of the lien, and, except in case of fraud or mistake, it cannot be restored by resuming possession: *Senscnebrenner v. Mathews*, 48 Wis., 250.

LIENS. HOW SUCH ENFORCED.

Section 3347. Every person having a lien given by either of the four last sections or existing in favor of any bailee for hire, carrier, warehouseman or pawnee or otherwise, by the common law, may, in case such debt remain unpaid for three months and the value of the property affected thereby does not exceed one hundred dollars, sell such property at public auction and apply the proceeds of such sale to the payment of the amount due him and the expenses of such sale. Notice, in writing, of the time and place of such sale and of the amount claimed to be due shall be given to the owner of such property personally or by leaving the same at his place of abode, if a resident of this state, and if not, by publication thereof once in each week, for three weeks successively, next before the time of sale in some newspaper published in the county in which such lien accrues, if there be one, and if not, by posting such notice in three public places in such county. If such property exceed in value one hundred dollars, then such lien may be enforced against the same by action in any court having jurisdiction.

CHAPTER 144.

LIENS. AGAINST SHIPS, BOATS, ETC.

Section 3348. Every ship, boat or vessel used in navigating the waters of this state shall be liable for and the claims or demands here-

inafter mentioned shall constitute a lien on such ship, boat or vessel, which shall take precedence of all other claims or liens thereon:

1. For all debts contracted by the master, owner, agent or consignee thereof on account of * * * work done or services rendered on board of such ship, boat or vessel, or on account of labor done * * * by mechanics, * * * or others in and for building, repairing, fitting out, furnishing or equipping such ship, boat or vessel.

* * * * *

Every boat or vessel used in navigating, etc.—Under this language, used in the statutes of 1839, p. 168, sec. 1, it was held that a scow boat belonging to a particular port, and used as a lighter and wood boat in the river and harbor, was not within the act. *Scow Boat v. Lynn*, 1 Pin. 239. Under the same language in ch. 116, R. S., 1849, the question whether the boat proceeded against was within the act was one of fact. *Rand v. The Barge*, 3 Pin., 363.

Such lien may be enforced by proceedings in admiralty or in the cases herein mentioned as prescribed in this chapter.

LIENS. RECEIVING NOTE NOT TO WAIVE.

Section 3349. The receiving of the note or other evidence of indebtedness of the owner, master, agent or consignee of such ship, boat or vessel for any such claim or demand shall not affect the right of the party to his lien under this chapter unless expressly received in payment therefor and so specified therein.

LIENS. OWNER PERSONALLY LIABLE.

Section 3350. The owner or owners of any such ship, boat or vessel shall be personally liable for the payment of every debt and for every demand and claim arising under the provisions of subdivisions 1 and 2 of section 3348. Such liability shall not in any way impair or affect the liability that may exist against the master, agent or consignee for the same debt or demand.

LIENS. ATTACHMENT; AFFIDAVIT FOR.

Section 3351. In all cases where the owner of any ship, boat or vessel is personally liable for any claim mentioned in section 3348, the claimant, his personal representatives or assigns may, in an action against such owner for the recovery of such claim, have a writ of attachment, by virtue of which all the right and title such owner had in such ship, boat or vessel at the time such claim accrued or at any time thereafter may be attached to secure the payment thereof. Before any such attachment shall issue in any such action the plaintiff or some one in his behalf shall make and annex thereto an affidavit stating:

1. That the defendant in such action is indebted to the plaintiff or has a claim or demand against him in a sum named, over and above all legal set-offs.

2. That such indebtedness is due for or accrued or arose out of or upon one or more causes specified in the first section of this chapter, specifying it.

3. The name of the ship, boat or vessel, if it have any name, and if not, then a description of the same as near as may be.

4. That the action in which such attachment is applied for was commenced within twelve months after such debt, demand or claim accrued or became payable, and no other or further affidavit shall be required for the purpose, and except as otherwise provided in this chapter the proceedings upon such attachment in an action in the circuit court shall be the same as provided in chapter 124, but no attachment shall be issued out of the circuit court in any such action unless the amount claimed in such affidavit shall exceed the sum of one hundred dollars.

Lien not divested by sale.—Under R. S. of 1858, the right of a party who had a claim against a boat or vessel, for which he might sue it, was not cut off, if before suit, but within the time in which he was entitled to sue, the boat was sold on an execution on a personal judgment against her owner. *Hay v. Steamboat Winnebago*, 10 Wis., 428.

LIENS. WHEN UNDERTAKING NOT REQUIRED.

Section 3352. In case the plaintiff's claim arises out of or is founded upon any of the causes set forth in the first subdivision of section 3348 he shall not be required to give the undertaking required by section 2732 unless required so to do by an order of the court or judge; and no such order shall be made unless the defendant or some one in his behalf shall make an affidavit showing that he has a good and valid defense in whole or in part to the claim or demand of the plaintiff, setting forth the nature of the defense; and where the defense is only to a portion of the claim, before any such order shall be made the defendant shall pay or tender to the plaintiff that portion of the claim to which there is no defense; such payment or tender shall not affect the jurisdiction of the court or prevent a recovery by the plaintiff of the same costs, disbursements and charges as he would have been entitled to had not the amount of his claim been reduced by such payment. No such order shall be made except upon one day's notice to the plaintiff, accompanied by copies of the affidavits and other papers upon which it is founded.

LIENS. ATTACHMENT, WHAT TO DIRECT.

Section 3353. Such writ of attachment, when issued by the circuit court, shall command the officer to whom the same is directed to attach and safely keep the ship, boat or vessel named or described in the affidavit, her tackle, apparel and furniture, if to be found within

his county, to satisfy the plaintiff's demand, with costs and expenses. The issuing of such writ of attachment shall not exclude the right to an attachment against the other property of the defendant under the provisions of chapter 124.

LIENS. JURISDICTION OF JUSTICES.

Section 3354. Justices of the peace within their respective counties shall have jurisdiction of all cases arising under this chapter where the claim shall not exceed two hundred dollars, and when the owner of such ship, boat or vessel is personally liable therefor the claimant may proceed by attachment against such ship, boat or vessel in an action against such owner in a justice's court in the manner prescribed in chapter 158, so far as the same can be made applicable thereto and not herein otherwise provided. Before any such attachment shall be issued in a justice's court the plaintiff or some one in his behalf must make and file with the justice an affidavit setting forth the same facts as are required in the affidavit mentioned in section 3351, and no other or further affidavit shall be required for that purpose.

CHAPTER 154.

JUSTICES, JURISDICTION OF.

Section 3572. Every such justice of the peace shall have jurisdiction over and cognizance of the following actions and proceedings:

1. Actions arising or growing out of contract, express or implied, wherein the debt or balance due or damages claimed shall not exceed two hundred dollars; * * * * *

Contract expressed or implied.—Statement in affidavit for attachment that defendant is indebted to plaintiff "for work, labor and services done and performed by him for defendant," etc., is a sufficient statement that the alleged indebtedness is due upon "contract expressed or implied." *Ruthe v. Green Bay*, etc., R. C., 37 Wis., 344.

CHAPTER 153.

ARBITRATIONS. HOW CONTROVERSY SUBMITTED.

Section 3544. All persons, except infants and persons under guardianship, may, by any instrument in writing, attested by one or more subscribing witnesses, submit to the decision of one or more arbitrators any controversy existing between them which might be the subject of a civil action, except as herein otherwise provided; and may, in such submission, agree that a judgment of any court of record, to be desig-

nated in such instrument, shall be rendered upon the award made pursuant to such submission.

Generally.—Agreements to arbitrate will not be specifically enforced. *Lopkins v. Gilman*, 22 Wis., 476

Court cannot compel parties litigant before it to submit controversy to arbitration nor impose it as a condition of appeal. *Sobey v. Thomas*, 37 Wis., 568.

ARBITRATIONS. MEETING OF ARBITRATORS; ADJOURNMENTS.

Section 3546. The arbitrators thus selected shall appoint a time and place for the hearing and may adjourn the same from time to time as may be necessary; and on the application of either party and for good cause they may postpone such hearing to a time not beyond the day fixed in such submission for rendering their award.

Notice.—An award made without appointing a time and place for a hearing without notice to the parties and without their presence or an opportunity of being heard is void. It is in the nature of the judgment of an inferior court which has not obtained jurisdiction of the parties. An award so made may be set aside without showing fraud or corruption. *Jordan v. Hyatt*, 3 Barb., 275, 283; *Elmendorf v. Harris*, 23 Wend., 628.

Liability of arbitrator.—An arbitrator is a quasi judicial officer, exercising judicial functions, and the same immunity extends to him as in the case of a judge or juror. Hence he is not liable to an action by one of the parties to a submission for fraudulently inducing, pursuant to a conspiracy with the attorney of the other party, the other arbitrators to make an unjust award in favor of the latter party. The attorney is so liable. *Hoosac Tunnel Co. v. O'Brien*, 137 Mass., 424.

ARBITRATIONS. ARBITRATORS TO BE SWORN.

Section 3547. Before proceeding to hear any testimony the arbitrators shall be sworn faithfully and fairly to hear and examine the matters in controversy and to make a just award, according to the best of their understanding; which oath may be administered by any person authorized to administer oaths, and the oath to witnesses and other persons examined before them may be administered by them.

The provision requiring that the arbitrators shall be sworn was only intended to secure the parties, if either desired it, a hearing and decision by persons sworn to a faithful discharge of their duties. But they may dispense with it, and can assent to the administration of the oath by some officer other than those prescribed by statute; and if it be not good as an oath it will still be good as a waiver. *Hill v. Taylor*, 15 Wis. 100.

ARBITRATIONS. ATTENDANCE OF WITNESSES.

Section 3548. Witnesses may be compelled to appear before such arbitrators by subpoena, to be issued by any justice of the peace, in the same manner and with like effect and subject to the same penalties for disobedience as in the cases of trials before justices of the peace.

ARBITRATIONS. ARBITRATORS MUST MEET; AWARD.

Section 3549. All the arbitrators must meet together and hear all the proofs and allegations of the parties; but an award by a majority of them shall be valid unless the concurrence of all the arbitrators be expressly required in the submission.

All must meet.—If all the arbitrators meet an award signed by the majority is valid. It is not necessary that the award show why minority did not sign. *Darge v. Horicon Iron M. Co.*, 22 Wis., 691.

And hear all the proofs.—The exclusion of proper evidence is fatal to the award. *Canfield v. Watertown Ins Co*, 55 Wis., 419.

Party who consents to examination of witnesses during his absence cannot afterward object. *Kane v. Fond du Lac*, 40 Wis., 495.

ARBITRATIONS. AWARD, REQUISITES OF.

Section 3550. To entitle any award to be enforced according to the provisions of this chapter it must be in writing, subscribed by the arbitrators making the same, and attested by a subscribing witness.

ARBITRATIONS. AWARD, CONFIRMATION OF.

Section 3551. Upon such submission being proved by the affidavit of a subscribing witness thereto and upon the award made in pursuance thereof being proved in like manner or by the affidavit of the arbitrators, within one year after the making of the same, the court designated in such submission shall, by order, confirm such award unless the same be vacated or modified or a decision thereon be postponed as herein provided.

Objections to award, how made.—Under this and the three following sections motion to vacate, modify or set aside award must be made before it is confirmed and judgment entered. If award has been irregularly confirmed and judgment irregularly entered such proceedings may be set aside for the purpose of making a motion to vacate, modify or correct the award. Notice of motion to confirm should be given. What amounts to waiver of notice. *Brace v. Stacy*, 56 Wis., 148.

ARBITRATIONS. AWARD, GROUNDS FOR VACATING.

Section 3552. Any party to such submission may move the court designated therein to vacate the same upon either of the following grounds:

1. That such award was procured by corruption, fraud or other undue means;
2. That there was evident partiality or corruption in the arbitrators or either of them;

3. That the arbitrators were guilty of misconduct in refusing to postpone the hearing upon sufficient cause shown or in refusing to hear any evidence, pertinent and material to the controversy, or for any other misbehavior of such arbitrators by which the rights of any party shall have been prejudiced;

4. That the arbitrators exceeded their powers or that they so imperfectly executed them that a mutual, final and definite award on the subject-matter submitted was not made.

Misconduct, etc.—The terms misconduct and misbehavior imply a wrongful intention and not an error in judgment on the part of the arbitrators. *Smith v. Cutler*, 10 Wend., 589.

Award may be vacated for the wrongful and improper behavior of the arbitrators upon proof of one of them who refused to sign it on account of the illegal and unfair conduct of the others. *National Bank v. Darragh*, 30 Hun., 29. But it seems that if all the arbitrators sign the award none of them will be allowed to contradict his act and to say that he did not concur in it. *Doke v. James*, 4 N. Y., 575; *Briggs v. Smith*, 20 Barb., 418; *Campbell v. Western*, 3 Paige, 126. There appear to be exceptions to this rule. *In re Williams*, 4 Danlo, 194; *Van Corlandt v. Underhill*, 17 Johns, 405.

Excess of powers.—Excess of power is but another term to express want of jurisdiction and is manifestly used in that sense here, and cannot mean a mere error in law in deciding upon the merits of the case. Hence where all claims and differences respecting a mercantile partnership are submitted an award will not be set aside because the arbitrators open an account which had been settled on an account stated twenty-three years before the submission, although objections were made to their going into it. *Emmett v. Hoyt*, 17 Wend., 410.

If an award purports on its face to be final the arbitrators have no power to reconsider it, though they orally agreed to do so at the time it was signed. *Edmundson v. Wilson*, 108 Ala., 118.

ARBITRATIONS. AWARD, CAUSES FOR MODIFYING.

Section 3553. Any party to such submission may also move the court designated therein to modify or correct such award in the following cases:

1. When there is evident miscalculation of figures or an evident mistake in the description of any person, thing or property referred to in such award;

2. Where the arbitrators shall have awarded upon some matter not submitted to them not affecting the merits of the decision upon the matters submitted;

3. Where the award shall be imperfect in some matter of form not affecting the merits of the controversy, and where, if it had been a verdict, such defect could have been amended or disregarded by the court according to the provisions of law.

ARBITRATIONS. AWARD, APPLICATION TO VACATE OR MODIFY.

Section 3554. Every application to vacate or modify an award shall be made to the court designated in the submission, at the next term

after the publication of such award, upon the same notice to the adverse party as in other motions, if there be time for that purpose; and if there be not time, such court or any judge thereof may, upon good cause shown, order a stay of proceedings on such award, upon such terms as shall appear just, until the term of the court next after such first term, at which term such application shall be made or shall be deemed waived.

Correction.—When the award has been delivered the powers of the arbitrators are exhausted and they cannot make another award to correct an error committed by them. *Doke v. James*, 4 N. Y., 568.

ARBITRATIONS. AWARD, MODIFICATION; REHEARING.

Section 3555. On such application the court may vacate such award in any of the cases hereinbefore specified, and if the time within which such award shall have been required to be made by the submission has not expired may, in their discretion, direct a rehearing by the arbitrators; and, in the cases herein specified, the court may modify and correct such award so as to effect the intent thereof and to promote justice between the parties.

ARBITRATIONS. AWARD, JUDGMENT ON.

Section 3556. Upon such award being affirmed or modified the court shall render judgment in favor of the party to whom any sum of money or damages shall have been awarded that he may recover the same; and if the award shall have ordered any act to be done by either party judgment shall be entered that such act be done according to such order. The cost of proceedings shall be taxed as in actions, and if no provisions for the fees and expenses of the arbitrators shall have been made in the submission or award the court shall make the same allowance as is provided by law for referees; but no costs shall be taxed for any other services or expenses prior to such application.

ARBITRATIONS. JUDGMENT, REVIEW AND ENFORCEMENT OF.

Section 3558. Such judgment roll shall be filed and judgment docketed as in other cases, shall have the same force and effect in all respects, be subject to all the provisions of law in relation to judgments in actions and may, in like manner, be reviewed by the supreme court on appeal or writ of error; and execution shall issue thereupon against the property or person of any party against whom a recovery shall be had in all respects as upon other judgments.

ARBITRATIONS. AWARD, COSTS ON SETTING ASIDE.

Section 3561. If, upon application made pursuant to the foregoing provisions, the court shall vacate and set aside any such award costs shall be awarded to the prevailing party, and judgment may be rendered therefor and enforced by execution.

ARBITRATIONS. AWARD, RECORD ON APPEAL FROM ORDER VACATING.

Section 3562. Upon any such order vacating an award the party aggrieved may appeal to the supreme court, on which appeal shall be returned the submission and award and all affidavits and papers used on such application, unless the court shall order copies thereof returned; and the court to which such appeal shall be taken shall proceed to affirm or reverse such order as shall be just.

ARBITRATIONS. COSTS; REVOCATION OF SUBMISSION.

Section 3565. Whenever any submission to arbitration shall be revoked by a party thereto, before the publication of an award, the party so revoking shall be liable to an action by the adverse party to recover all the costs and expenses incurred and damages which he may have sustained in preparing for such arbitration; but neither party shall have power to revoke the powers of the arbitrators, after the cause shall have been finally submitted to them, upon a hearing of the parties, for their decision.

A revocation of the submission must be in writing. *Shroyer v. Bash*, 57 Ind., 349.

If one of the parties revokes the submission and brings an action against the other party to recover the claims submitted the latter may, in such action, recover by way of counterclaim the damages he has sustained by such revocation, the expenses paid for witnesses on the arbitration and such other proper expenses as would be revocable in an action upon the bond. *Curtis v. Barnes*, 30 Barb., 225.

ARBITRATIONS. BOND, ACTION ON.

Section 3566. If the submission so revoked was contained in the condition of any bond the obligee in such bond shall be entitled to prosecute the same in the same manner as other bonds with conditions other than for the payment of money and to assign such revocation as a breach thereof; and for such breach he shall recover as damages the costs and expenses incurred and the damages sustained by him in preparing for such arbitration.

The penalty of the bond does not affect the power of the arbitrators. That is governed by the submission. *Ex parte Wallis*, 7 Cowen, 522.

CHAPTER 176.

ACCOUNT BOOKS.

Section 4186. Whenever a party in any cause or proceeding shall produce at the trial his account books and swear that the same are his account books, kept for that purpose; that they contain the original entries of charges for * * * work and labor * * * performed, * * * and that such entries are just, to the best of his knowledge and belief; and that said entries are in his own handwriting and that they were made at or about the time * * * said work and labor or other services were performed, * * * the party offering said book or books as evidence, being subject to all the rules of cross-examination by the adverse party that will be applicable by the rules to any other witness giving testimony relating to said book or books, if it shall appear upon the examination of said party that all the interrogatories in this section contained are satisfactorily established in the affirmative, then the said book or books shall be received as presumptive evidence in proof of the charges therein contained.

When dates are not given in book it is not an account book. *Moss v. Vroman*, 5 Wis., 147.

Nor when charges are vague and uncertain. *Reed v. Jones*, 8 Wis., 421.

A witness may properly testify that entries made by him in a book of accounts are correct, although he has no independent recollection of the transactions thus entered. *Curran v. Witter*, 68 Wis., 16.

ACCOUNT BOOKS. PROOF OF IN HANDWRITING OF CLERK, ETC.

Section 4187. Whenever the original entries mentioned in the preceding section are in the handwriting of an agent, servant or clerk of the party the oath of such agent, servant or clerk may in like manner be admitted to verify the same, and said books shall be testimony in the same manner as the books mentioned in the preceding section: provided, that such books mentioned in this and the preceding section shall not be admitted as testimony of any item of money delivered at one time exceeding five dollars or of money paid to third persons, or of charges for rent.

Exceeding five dollars.—Books cannot be admitted to prove payment of sums larger than five dollars, but may be used as memoranda to refresh the memory of witnesses. *Winnier v. Bauman*, 28 Wis., 563.

CHAPTER 177.

ACTIONS, TIME FOR COMMENCING.

Section 4219. The following actions must be commenced within the periods respectively hereinafter prescribed after the cause of action has accrued.

WITHIN SIX YEARS; FOREIGN LIMITATION; NOTICE OF INJURY.

Section 4222. Within six years:

* * * * *

3. An action upon any other contract, obligation or liability, express or implied, except those mentioned in the last two preceding sections.

* * * * *

5. An action to recover damages for any injury * * * to the person * * * or rights of another, not arising on contract, except in case where a different period is expressly prescribed. But no action to recover damages for injuries to the person, received without this state, shall be brought in any court in this state when such action shall be barred by any statute of limitations of actions of the state or county in which such injury was received unless the person so injured shall, at the time of such injury, have been a resident of this state. No action to recover damages for an injury to the person shall be maintained unless, within one year of the happening of the event causing such damages, notice in writing, signed by the party damaged, his agent or attorney, shall be served upon the person or corporation by whom it is claimed such damage was caused, stating the time and place where such damage occurred, a brief description of the injuries, the manner in which they were received and the grounds upon which claim is made and that satisfaction thereof is claimed of such person or corporation. Such notice shall be given in the manner required for the service of summons in courts of record. No such notice shall be deemed insufficient or invalid solely because of any inaccuracy or failure therein in stating the description of the injuries, the manner in which they were received or the grounds on which the claim is made, provided it shall appear that there was no intention on the part of the person giving the notice to mislead the other party and that such party was not in fact misled thereby; provided, that the provision herein requiring notice of one year shall not apply to any event causing damage which happened before the twenty-eighth day of April, one thousand eight hundred and ninety-seven, nor shall that part of section 5 of chapter 304 of the laws of one thousand eight hundred and ninety-seven, relating to such notice, apply to any such event.

* * * * *

WITHIN TWO YEARS.

Section 4224. Within two years:

* * * * *

3. An action brought by the personal representatives of a deceased person to recover damages, when the death of such person was caused by the wrongful act, neglect or default of another.

* * * * *

Death by wrongful act, etc.—The limitation is absolute and unconditional. *George v. Chicago, etc., R. Co.*, 51 Wis., 603.

CHAPTER 178.

DEATH BY WRONGFUL ACT, RECOVERY FOR.

Section 4255. Whenever the death of a person shall be caused by a wrongful act, neglect or default and the act, neglect or default is such as would, if death had not ensued, have entitled the party injured to maintain an action and recover damages in respect thereof, then and in every such case the person who, or the corporation which would have been liable, if death had not ensued, shall be liable to an action for damages notwithstanding the death of the person injured; provided, that such action shall be brought for a death caused in this state.

Scope of section.—The right given by this section is not limited to rights of action in favor of injured persons as the law existed on that subject at the time this section was enacted; it extends to the personal representative of a deceased person in all cases where he could recover for his injury if he had lived. *Eau v. Chicago, etc., R. Co.*, 95 Wis., 69.

DEATH BY WRONGFUL ACT; WHO TO BRING ACTION; DAMAGES LIMITED.

Section 4256. Every such action shall be brought by and in the name of the personal representative of such deceased person, and the amount recovered shall belong and be paid over to the husband or widow of such deceased person, if such relative survive him or her; but if no husband or widow survive the deceased the amount recovered shall be paid over to his or her lineal descendants and his or her lineal ancestors in default of such descendants; and in every such action the jury may give such damages, not exceeding five thousand dollars, as they shall deem fair and just in reference to the pecuniary injury resulting from such death to the relatives of the deceased specified in this section.

Brought by personal representative.—The action must be brought in the name of the executor or administrator. *Whiton v. Railway Co.*, 21 Wis., 305.

Damages.—A widow who sues as administrator to recover damages sustained by the death of her husband may recover the value of her support and pro-

tection by him during the time he would probably have lived, and also the addition his earnings would probably have made to his possessions and the reasonable expectation she had of pecuniary advantage by ultimately securing a share of such earnings as one of his heirs, the probability of that expectation being disappointed being kept in mind by the jury. *Lawson v. Chicago, etc., Railway Co.*, 64 Wis., 447.

CHAPTER 181.

DEATH. CAUSED BY INJURY TO RAILROAD.

Section 4342. Any person who shall wilfully and maliciously place any obstruction upon the track of any railroad in this state, or take up or displace a rail, switch or signal, or remove a spike or otherwise injure, break down or destroy any bridge, road-bed or other structure of any such railroad, whereby the death of any person shall be caused, shall be punished by imprisonment in the state prison during life.

DEATH, RESULTING FROM NEGLIGENCE, ETC., OF ENGINEER AND OTHERS OF STEAMBOAT, ETC.

Section 4358. Any person having charge of any steamboat or railroad train for the conveyance of passengers, or any engineer or person having charge of the boiler of such steamboat or locomotive of such railroad train or of any other apparatus for the generation of steam who shall, from ignorance or gross neglect, or for the purpose of exceeding any other steamboat or railroad train in speed, cause a collision or wreck of such steamboat or railroad train, or create or allow to be created such an undue quantity of steam as to burst or break the boiler or other apparatus in which it shall be generated, or any apparatus or machinery connected therewith by which collision, wreck or bursting or breaking of such boiler any person shall be killed, shall be deemed guilty of manslaughter in the third degree.

PENALTY.

Section 4361. Any person who shall be guilty of manslaughter in the third degree shall be punished by imprisonment in the state prison not more than four years nor less than two years.

RAILROADS. INJURING OF.

Section 4386. Any person who shall wilfully, maliciously or wantonly place any obstruction upon the track of any steam, electric or cable railroad in this state, or take up or displace a rail, switch or signal, or remove a spike, or otherwise injure, break down or destroy the bridge, roadbed or other structure of such railroad shall be punished

by imprisonment in the state prison not more than ten years nor less than one year.

Obstruction; intent.—Under a statute which declares it a felony to wilfully and maliciously put upon the track of any railroad any kind of obstruction so as to endanger the safe-running of the locomotive and cars, or either of them, one who places obstructions on a railway for the purpose of obtaining a reward from the company for giving notice thereof is guilty, although he signalled the train and it was stopped before the obstruction was reached. *Crawford v. State*, 15 Lea, 343; 54 Am. Rep., 423.

IMPRISONMENT, KIDNAPPING, ETC.

Section 4387. Any person who shall, without lawful authority, * * seize, confine, inveigle, or kidnap another with intent to cause such person * * * to be sold as a slave or in any way held to service against his will shall be deemed guilty of a felony and on conviction thereof shall be punished by imprisonment in the state prison not more than fifteen years nor less than one year; and such offense may be tried in the county where it is committed or in any county into which the person so kidnapped may be carried or sent; and upon the trial thereof the consent thereto of the person so seized, confined, inveigled or kidnapped shall not be a defense unless it shall be made satisfactorily to appear that such consent was not obtained by fraud, nor extorted or forced by duress or threats.

INMATES OF INSTITUTION, ABUSE OF.

Section 4389. Any officer or other person in charge of or employed in any hospital or asylum for the insane, poor-house, work-house, state prison, state reformatory, jail, school for the deaf and dumb or blind, the state public school, home for the feeble minded, house of correction, industrial schools for boys or girls or orphan asylum who shall abuse, neglect or ill-treat any person confined therein or an inmate thereof shall be punished by imprisonment in the county jail not more than one year or by fine not exceeding two hundred dollars.

DOORS, WHAT TO OPEN OUTWARDLY; FIRE-ESCAPES.

Section 4390. Any person or corporation, board of trustees, building committee, or other official person, board or body who shall erect or cause to be erected any theater, lecture room, hall, school-house, church, factory, hotel, court-house, town hall, city hall or opera house without providing the same with outer doors that swing or open outwardly, or who shall fail or neglect to provide any theater, lecture room, opera house, concert or other hall, school-house or hotel with fire-escapes as provided by law, shall be punished by fine of not less than one hundred dollars; and any architect who shall prepare plans for any building which is required by law to be provided with such

doors or with fire-escapes, without providing in such plans for the same, shall be punished by fine of twenty-five dollars for the first offense and one hundred dollars for each subsequent offense.

FIRE-ESCAPES ON FACTORIES, ETC.

Section 4390a. Every person or corporation owning, occupying or controlling any factory, workshop or structure three or more stories high, except such as are included in the next preceding section, in which twenty-five or more persons are employed at any kind of labor, shall provide and keep connected with the same one or more good and substantial metallic or fire-proof ladders, stairs or stairways, ready for use at all times, reaching from the cornice to the top of the first story, and placed on the outside thereof in such position and number as may be designated by the chief of the fire department or fire marshal of the city or village in which such structure is situated, or by the state factory inspector, and at each story above the first a wrought iron balcony in connection with such ladder, such balcony to be substantially attached to the structure, and of such length as to permit of access to it from two or more windows on each story, and of sufficient size to furnish reasonable means of escape to the persons employed therein from each and every floor or story above the first; and in all cities and villages where there is a water supply, either from water-works, fire engines or pumping station, there shall be attached to such fire-escape, except on structures equipped with automatic sprinklers, a three-inch wrought iron standpipe extending from a point within five feet from the ground to a point three feet above the roof or cornice, and on the roof shall be attached a two and one-half inch angle hose valve, with male hose connection and a double or siamese "Y" female hose connection at the base of the pipe, the threads of which shall conform to the size and pattern used by the fire department where the structure is located. Any such person or corporation who shall fail, for three months after the receipt of notice in writing, stating the substance of the provisions of this section, from such chief, marshal or inspector to provide and keep such means of escape or such standpipe shall be punished by fine not exceeding one hundred dollars.

RAILROAD EMPLOYEES, WILFUL NEGLECT OF.

Section 4392. Any officer, agent, conductor, engineer or employee of any railroad company operating within this state who shall wilfully neglect or omit to ring or cause to be rung the bell on the engine of any train of cars or on an engine alone when about to cross or before crossing any street opened and used for travel in any city or village or to blow the whistle eighty rods before crossing and ring the bell while crossing any highway, or to bring or cause to be brought

to a full stop any railroad train or engine before arriving at or passing upon the track of another railroad and within four hundred feet of the junction or crossing of such railroad, or before arriving at or passing upon any drawbridge over any stream navigated by boats, vessels or other craft during the season of such navigation and when the draw of such bridge is necessary to be used for the passage of such boats, vessels or other craft, within six hundred feet of such drawbridge, when required by law, or to allow and permit the railroad train first arriving at such railroad crossing or junction to first pass over shall be punished by imprisonment in the county jail not more than six months or by fine not exceeding one hundred dollars.

Shall come to a full stop.—Trains must come to a full stop somewhere between the four hundred foot post and the track of another road. *Lockwood v. Chicago, etc., R. Co., 53 Wis., 50.*

Duty of engineer.—The object of stopping the train is to enable the engineer to take observations as to whether there are any trains on it with which he would be liable to collide and to have his train under proper control in case of danger or collision; and while the train which reaches its stopping place first has the right of way, and, in the absence of anything indicating the contrary, the engineer thereof would have a right to act on the presumption that a train on another track, which had not yet reached its stopping place, would stop there and concede the right of way, yet he would have no right to proceed and attempt to make the crossing, so as to endanger his train, if he saw that his right of way was being disregarded by those in charge of the approaching train. If he saw that it had passed its stopping-place without stopping or that it was approaching at such a rate of speed as to indicate that it would not or could not stop, and hence that there would be danger of collision in case he proceeded, he would not be justified in doing so if he could stop his train before reaching the crossing. *Pratt v. Chicago, etc., R. Co., 38 Minn., 455.*

RAILROAD EMPLOYEES; LOCKING CARS; DANGEROUS ARTICLES.

Section 4393. Any officer, agent, conductor or any employee of any railroad company operating within this state who shall wilfully run or cause to be run any railroad train or engine faster than at the rate of six miles per hour, while passing over the traveled streets of any city or village or until such streets have been passed by such train or engine, or who shall lock or cause to be locked the doors of any passenger car occupied by any passenger, while such car is in motion or so as to prevent the free exit therefrom of any passenger at any time, or who shall use or authorize the use of any kerosene oil or other dangerously explosive burning fluid in lighting any passenger car, or who shall knowingly carry or cause or permit to be carried or transported on any baggage, mail, express or passenger car any powder, dynamite or other dangerously explosive substance, and any person who shall, secretly or surreptitiously, or by concealment or misrepresentation, ship or cause to be shipped upon any railroad, train or car any powder, dynamite or other dangerously explosive substance without the knowledge of the proper officer, agent, conductor or employee in charge of

such train or car shall be punished by imprisonment in the county jail not more than six months or by fine not exceeding one hundred dollars.

EXPLOSIVES FOR UNLAWFUL PURPOSES, SALE, TRANSPORTATION, ETC.

Section 4398a. Any person who shall make, manufacture, compound, buy, sell, give away, offer for sale or to give away, transport or have in possession any nitro-glycerine, giant, oriental or thunderbolt powder, dynamite, ballistile, fulgarite, detonite, or any other explosive compound with intent that the same shall be used in this state or anywhere else for the injury or destruction of public or private property or the assassination, murder, injury, or destruction of any person or persons, either within this state or elsewhere, or knowing that such explosive compounds are intended to be used by any other person or persons for any such purpose, shall be punished by imprisonment in the state prison not more than ten years nor less than three years or by fine not exceeding one thousand dollars nor less than five hundred dollars.

EXPLOSIVES FOR UNLAWFUL PURPOSES, AIDING IN MANUFACTURE, ETC., OF.

Section 4398b. All persons aiding, abetting or in any way assisting in the manufacture, compounding, buying, selling, offering for sale or transporting any explosive compounds either by furnishing material or ingredients or soliciting or contributing money or other property with which to purchase said materials or ingredients, or by assisting by skill or labor, or by acting as agents for the principal, or in any manner aiding as accessories before the fact, knowing that any of such explosive compounds are intended to be used by the principals or any other person or persons for any of the purposes mentioned in the preceding section, shall be deemed principals, and may be convicted and punished in the same manner and to the same extent as such principal or principals.

ENGINE, USE OF, ON HIGHWAY AT NIGHT.

Section 4398d. No person shall cause any steam engine to be propelled or hauled upon or over any highway in the night-time without causing some person carrying a good clean lantern, giving a strong, clear red light, to go and be at least twenty and not more than thirty rods in advance of such engine; such person so in advance shall, upon meeting any person riding or driving any animal or animals and desiring to pass such engine, signal the person in charge thereof to stop

the same, and the person in charge of such engine shall, immediately upon being made aware of the signal, stop the engine and, together with the person so in advance thereof, render all assistance possible to enable the person so riding or driving to pass such engine in safety. Every violation of this section shall be punishable by imprisonment in the county jail not more than twenty days or by fine not exceeding fifteen dollars nor less than five dollars.

CHAPTER 182.

EMBEZZLEMENT BY EMPLOYEE OR SERVANT.

Section 4418. Any * * * employee, or servant of this state or of any county, town, school district, city, village or other municipal corporation therein, or of any banking, railroad, insurance or telegraph company or other corporation, or of any joint-stock company or association, or in the service or employment thereof, who, by virtue of such office or employment, shall have the possession or custody of, or shall be entrusted with, the safe keeping, disbursement, investment or payment of any money or fund, or with the safe keeping, sale, carrying or delivering of any goods, wares, merchandise, produce, lumber or any other property or thing which is the subject of larceny, belonging to or under the care or control of the state, or such municipal or other corporation, or in which the state or such corporation has an interest, * * * messenger, employee or servant of any private person, corporation, co-partnership or association, except apprentices and other persons under the age of sixteen years, who, by virtue of his business or employment, shall have the care, custody or possession of or shall be entrusted with the safe keeping, disbursement, investment or payment of any money, or who shall have the care, custody or possession of or shall be entrusted with the safe keeping, carrying, sale or delivery of any goods, wares, merchandise, produce, lumber or any other property or thing which is the subject of larceny, belonging to such other person, corporation, co-partnership or association, shall embezzle or fraudulently convert to his own use or to the use of any other person except the owner thereof, or shall take, carry away or secrete, with intent to convert to his own use or to the use of any other person except the owner thereof any such money, fund, goods, wares, merchandise, produce, lumber or any other property or thing shall be punished, if the money or property so embezzled shall exceed the value of one hundred dollars, by imprisonment in the state prison not more than five years nor less than one year, and if the money or property so embezzled shall not exceed the value of one hundred dollars and shall exceed the value of twenty dollars, by imprisonment in the

state prison or county jail not more than one year nor less than six months, or by fine not exceeding two hundred dollars, and if the money or property so embezzled shall not exceed the value of twenty dollars, by imprisonment in the county jail not more than six months or by fine not exceeding one hundred dollars. * * * The offense of embezzlement may be prosecuted and punished in any county in which the person charged had possession of the property or thing alleged to have been embezzled.

EVIDENCE.

Section 4419. The refusal or wilful neglect of any * * * person named in the last preceding section to pay over any moneys or to deliver any property in his care, custody or possession by virtue of his office or employment upon the demand thereof by the proper person, co-partnership, corporation or authority entitled to receive the same, or as required by law, or the selling, mortgaging or pledging of any such property, or the loaning or depositing of any such moneys, by * * * person, for his own gain, profit or advantage without special authority shall in each case be prima facie evidence of the embezzlement thereof.

* * * * *

CAR, ENGINE, ETC., INJURY TO.

Section 440a. Any person who shall, individually or in association with one or more others, wilfully break, injure or remove any part or parts of any electric, horse or other railway car, coach or locomotive, or any other portable vehicle or traction engine, or any part or parts of any stationary engine, machine, implement or machinery for the purpose of destroying such locomotive, engine, car, coach, vehicle, implement or machinery, or of preventing the useful operation thereof, or who shall in any other way wilfully or maliciously interfere with or prevent the running or operation of any locomotive, engine or machinery shall be punished as provided in the preceding section.

BOOM, DESTRUCTION OF.

Section 4433. Any person who shall wilfully and maliciously break, cut away, injure or destroy any boom lawfully established and being in any waters of this state, or make any cut or breach in the same with intent to destroy the same, shall be punished by imprisonment in the county jail not more than six months or by fine not exceeding one hundred dollars.

COUNTERFEITING LABEL ON GOODS.

Section 4463. Any person who shall knowingly and wilfully forge or counterfeit or cause or procure to be counterfeited upon any goods, wares or merchandise the private stamp or label of any mechanic or manufacturer, with intent to defraud the purchaser or manufacturer of any goods, wares or merchandise whatsoever, shall be punished by imprisonment in the county jail not more than six months or by fine not exceeding one hundred dollars.

COUNTERFEITING TRADE MARK, FORM OF ADVERTISEMENT,
ETC.; AND OBTAINING BY FRAUD.

Section 4464. Any person who shall counterfeit or imitate any label, trade mark, term, design, device or form of advertisement adopted or used by any other person or any association or union of workmen for the purpose of designating, making known or distinguishing any goods, wares, merchandise or other product of labor as having been made, manufactured, produced, prepared, packed or put on sale by such person, association or union, or by a member or members of such association or union, or sells, offers for sale or in any way utters or circulates any counterfeit or imitation of any such label, trade mark, term, design, device or form of advertisement, or knowingly uses any such counterfeit or imitation, or knowingly sells or disposes of, or keeps or has in his possession, with intent that the same shall be sold or disposed of, any goods, wares, merchandise or other product of labor to which any such counterfeit or imitation is attached or affixed, or on which the same is printed, painted, stamped or impressed, or knowingly sells or disposes of, or keeps or has in his possession with intent that the same shall be sold or disposed of, any goods, wares, merchandise or other product of labor contained in any box, case, can or package to which or on which any such counterfeit or imitation is attached, affixed, printed, painted, stamped or impressed shall be punished by imprisonment in the county jail not more than six months nor less than ten days, or by fine not exceeding one hundred dollars nor less than ten dollars, or by both such fine and imprisonment. Any person who shall, for himself or on behalf of another or of an association or union, procure the filing and recording in the office of the secretary of state of any label, trade mark, term, design, device or form of advertisement by making any false or fraudulent representations or declarations, verbally or in writing, or by any other fraudulent means shall be punished by imprisonment in the county jail not more than one year or by fine not exceeding two hundred dollars, or by both such fine and imprisonment.

Validity.—It is competent for the legislature to protect a labor union in the

use of a label for designating articles made by its members and offered for sale; such protection is not class legislation. *State v. Bishop*, 128 Mo., 373; *Carsons v. Ury*, 39 Fed., Rep., 777.

BOYCOTTING, ETC.; INJURY TO BUSINESS; RESTRAINT OF WILL.

Section 4466a. Any two or more persons who shall combine, associate, agree, mutually undertake or concert together for the purpose of wilfully or maliciously injuring another in his reputation, trade, business or profession by any means whatever, or for the purpose of maliciously compelling another to do or perform any act against his will, or preventing or hindering another from doing or performing any lawful act shall be punished by imprisonment in the county jail not more than one year or by fine not exceeding five hundred dollars.

Held under a similar Connecticut statute that a conspiracy against publishers to compel them to discharge certain workmen against their will and to employ the conspirators and such persons as they should name was contrary to the statute. It is a crime for persons to conspire to injure other persons by depriving them of their employment. *State v. Glidden*, 55 Conn., 46.

EMPLOYEES, BLACKLISTING AND COERCION OF.

Section 4466b. Any two or more persons, whether members of a partnership or company or stockholders in a corporation, who are employers of labor, who shall combine or agree to combine for the purpose of preventing any person seeking employment from obtaining the same, or for the purpose of procuring or causing the discharge of any employee by threats, promises, circulating blacklists or causing the same to be circulated, or who shall, after having discharged any employee, prevent or attempt to prevent such employee from obtaining employment with any other person, partnership, company or corporation by the means aforesaid, or shall authorize, permit or allow any of his or their agents to blacklist any discharged employee or any employee who has voluntarily left the service of his employer, or circulate a blacklist of such employee to prevent his obtaining employment under any other employer, or who shall coerce or compel any person to enter into an agreement not to unite with or become a member of any labor organization as a condition of his securing employment or continuing therein, shall be punished by a fine of not more than five hundred dollars nor less than one hundred dollars, which fine shall be paid into the state treasury for the benefit of the school fund. Nothing in this section shall prohibit any employer of labor from giving any other such employer, to whom a discharged employee has applied for employment, or to any bondsman or surety, a truthful statement of the reasons for such discharge, when requested so to do by such employee, the person to whom he has applied for employment, or any bondsman or surety; but it shall be a violation of this section to give such in-

formation with the intent to blacklist, hinder or prevent such employee from obtaining employment; neither shall anything herein contained prohibit any employer of labor from keeping for his own information and protection a record showing the habits, character and competency of his employees and the cause of the discharge or voluntary quitting of any of them.

WORK, PREVENTING PURSUIT OF.

Section 4466c. Any person who by threats, intimation, force or coercion of any kind shall hinder or prevent any other person from engaging in or continuing in any lawful work or employment, either for himself or as a wageworker, or who shall attempt to so hinder or prevent shall be punished by fine not exceeding one hundred dollars or by imprisonment in the county jail not more than six months, or by both fine and imprisonment in the discretion of the court.

CHAPTER 332.

LABOR ORGANIZATIONS, DISCRIMINATION AGAINST MEMBERS OF.

Section 1. No person, corporation, agent or officer on behalf of any person or corporation, shall coerce or compel any person or persons into an agreement, either written or verbal, not to join or become a member of any labor organization, as a condition of such person or persons securing employment or continuing in the employment of any such person or corporation, and no person or corporation shall discharge an employee because he is a member of any labor organization.

Section 2. Any person or corporation violating any of the provisions of this act shall be fined not less than two hundred dollars nor more than one thousand dollars, or be punished by imprisonment in the county jail not to exceed nine months or both.

Section 3. This act shall take effect and be in force from and after its passage and publication.

CHAPTER 184.

UNLAWFUL ASSEMBLY AND RIOT.

Section 4511. Any three or more persons who shall assemble in a violent or tumultuous manner to do an unlawful act or, being together, shall make any attempt or motion towards doing a lawful or an unlawful act in a violent, unlawful or tumultuous manner, to the ter-

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ror and disturbance of others, shall be deemed an unlawful assembly; and if they commit such acts in the manner and with the effect aforesaid they shall be deemed guilty of a riot and shall be punished in either case by imprisonment in the county jail not more than one year or by fine not exceeding five hundred dollars.

CONVICTION OF ONE PERSON.

Section 4512. Any person engaged in an unlawful assembly or riot may be prosecuted and convicted thereof alone, if it be alleged in the indictment or information and proved at the trial that three or more persons were engaged therein, and if known they must be named, but if unknown that fact must be alleged.

UNLAWFUL ASSEMBLY, SUPPRESSION OF.

Section 4513. If any persons to the number of twelve or more, any of whom being armed with a dangerous weapon, or if any persons to the number of thirty or more, whether armed or not, shall be unlawfully, riotously or tumultuously assembled in any city, village or town it shall be the duty of the mayor and each of the aldermen of such city, and of the president and each of the trustees of such village, and of the supervisors of such town, and of every justice of the peace, constable and coroner living in such city, village or town, and of the sheriff of the county and his deputies to go among the persons so assembled or as near them as may be with safety and in the name of the state of Wisconsin to command all the persons so assembled immediately and peaceably to disperse, and if the persons so assembled shall not thereupon immediately and peaceably disperse, it shall be the duty of each of such magistrates and officers to command the assistance of all persons there present in seizing, arresting and securing in custody the persons so unlawfully assembled so that they may be proceeded against according to law.

CHAPTER 185.

GAMBLING IN CARS, ETC.; ARREST; PLACE OF TRIAL.

Section 4536. Any person who shall gamble, in any manner or by any means, in any railroad car, depot, station-house or building shall be punished by imprisonment in the county jail not more than one year or by fine not exceeding two hundred dollars; and any officer, agent, clerk, conductor, brakeman, employee or servant, in charge or assisting in or about the management of any railroad car, depot, station-house or building, who shall knowingly suffer or permit any

gambling whatsoever therein shall be punished by imprisonment in the county jail not more than six months or by fine not exceeding two hundred dollars; and every officer, agent, clerk, conductor or brakeman in charge or assisting in the management of any such car, depot, station-house or building is hereby authorized and required to arrest forthwith, with or without warrant, any person found by him gambling in any such place and bring him before some court having jurisdiction of such offense or deliver him to some officer authorized to make arrests and make such proper complaint as is required by law; and any person who shall gamble as aforesaid on any railroad car may be tried in any county through which the railroad on which such car shall pass.

LABOR, VAGRANTS TO PERFORM; WHAT NOT TO HAVE.

Section 4556d. It shall be the duty of the sheriff or keeper of any jail to which any person convicted of being a vagrant or tramp is sentenced to imprisonment at hard labor therein to keep such person engaged in doing such work as the county board has directed, and if no direction has been given, then to keep him at work upon the highways or other public improvements, and such sheriff or keeper may appoint or detail any deputy or other police officer to guard such person and keep him at work. Any person so sentenced to hard labor who wantonly or wilfully refused to work shall be punished by such sheriff or jailer by solitary confinement in the county jail to which he was committed for not more than ten days for each offense; provided that such punishment shall not extend beyond the time for which he was sentenced. No such sheriff or keeper shall permit any person sentenced to imprisonment as a tramp or vagrant to have or possess any tobacco, newspaper, cards or any other article of amusement or entertainment, or permit such person to be kept or fed otherwise than as stated in the commitment, by virtue of which he was received into such jail, during the time he is confined there. Any person violating any provision of this section shall be punished by a fine of not less than twenty-five dollars nor more than one hundred dollars.

CHAPTER 186.

FEMALE, EMPLOYING FOR PURPOSE OF PROSTITUTION, ETC.

Section 4581b. Any person who shall fraudulently, deceitfully or by any false representations entice, abduct, induce, decoy, hire, engage, employ or take any woman over sixteen years of age and of previous chaste character from her father's house or from any other place

where she may be for the purpose of prostitution or for unlawful sexual intercourse, and any person who shall knowingly or intentionally aid, abet, assist, advise or encourage any such act for the purpose aforesaid shall be punished by imprisonment in the state prison not less than five years nor more than fifteen years.

Previous chaste character.—Chaste character is presumed, and the burden is on the defendant to impeach it, notwithstanding the presumption of his innocence. *Bradshaw v. People*, 153 Ill., 156.

SAME SUBJECT.

Section 4581c. Any person who shall, by any such means as are mentioned in the next preceding section, entice, abduct, induce, decoy, hire, engage, employ or take in any manner any female from her home or from any other place where she may be, for the purpose of prostitution or for unlawful sexual intercourse, and any person who shall knowingly or intentionally aid, abet, assist, advise or encourage the doing of any such act for the purpose aforesaid shall be punished by imprisonment in the state prison not more than five years nor less than one year.

CHILDREN, EMPLOYMENT OF.

Section 4587a. Any person having the care, custody, or control of any child under the age of fourteen years who shall exhibit, use or employ, or in any manner or under any pretense sell, apprentice, give away, let out or otherwise dispose of such child to any person for any obscene, indecent or immoral purpose, exhibition or practice, or for any business, exhibition or vocation injurious to the health or dangerous to the life or limb of such child, or who shall cause, procure or encourage any such child to engage therein, or any person who shall take, receive, hire, employ, use, exhibit or have in custody any such child for any such purpose shall be punished by imprisonment in the county jail not exceeding six months or by a fine of not more than one hundred dollars, or by both imprisonment and fine.

CHAPTER 187.

TRANSPORTATION OF CORPSE DEAD OF CONTAGIOUS DISEASE.

Section 4608a. Any person who shall for himself or as the agent or servant of another person or corporation transport or deliver for transportation the body of any person dead of diphtheria, scarlet fever, small pox, Asiatic cholera (cholera), leprosy, typhus or ship fever, or yellow fever shall be punished as hereinafter provided. For all the pur-

poses of this section membranous croup shall be considered and poses of this section membranous croup shall be considered and treated as diphtheria. Any person who shall transport the body of any person dead of anthrax, puerperal fever, typhoid fever, erysipelas, measles or other contagious, infectious or communicable disease, unless the same be wrapped in a sheet thoroughly saturated with a strong solution of bi-chloride of mercury, in the proportion of one ounce thereof to a gallon of water, and incased in air-tight zinc, tin, copper or lead lined coffin or in an air-tight iron casket, hermetically sealed, and all enclosed in a strong, tight, wooden box; or unless the body be wrapped in a sheet and disinfected by a solution of bi-chloride of mercury, as above, and placed in a strong coffin or casket which is encased in a hermetically sealed zinc, copper or tin case, and all enclosed in a strong outside wooden box of material not less than one inch and a half thick; or transport any such body if it is accompanied by any article which has been exposed to the infection of any such disease, or without a permit from a board of health or other competent health authority and an affidavit of the undertaker in charge of the body stating that the body has been prepared in accordance with this section and that the coffin used conforms to the requirements hereof, shall be punished by a fine of not less than twenty-five dollars nor more than five hundred dollars, or by imprisonment in the county jail for not less than thirty days nor more than sixty days, or by both such fine and imprisonment.

TRANSPORTATION OF BODIES DEAD OF NON-CONTAGIOUS DISEASE.

Section 4608c. Any person who shall for himself or as the agent or servant of any other person or corporation transport or deliver for transportation the body of any person who died of any disease that is not contagious, infectious or communicable to any point in this state, unless the same is encased in a sound coffin or strong metallic case and inclosed in a strong wooden box securely fastened, or who transports or delivers for transportation out of this state to any point to which the time required for transportation shall exceed eighteen hours, unless the same is enclosed in an air-tight zinc, tin, copper or lead coffin or casket inclosed in a soldered zinc, copper or tin case and in a strong wooden box made of material not less than one inch thick and provided with four iron chest handles, and accompanied by a permit from a board of health or other proper health authority giving permission for its removal, showing the name, age, place and cause of death of the deceased, the point to which the body is to be shipped, the medical attendant and the name of the undertaker in charge thereof, shall be punished as provided in section 4608a.

CHAPTER 201.

CONVICTS. EMPLOYMENT OF.

Section 4918. All convicts sentenced to the punishment of hard labor in said prison shall be constantly employed for the benefit of the state, except that no person confined therein or in any other penal institution within this state shall be compelled to perform any factory work on any legal holiday; but this shall not interfere with the household work of any such institution or the management or discipline thereof in any other particular.

* * * * *

CONVICTS, LEASING LABOR OF.

Section 4938. The state board of control is authorized and empowered to lease, from time to time, the labor of such portion of the prisoners confined in the state prison, together with such shop-room, machinery and power as may be necessary for their proper employment, to such persons, for such purposes, upon such terms and conditions and for such length of time, not exceeding five years at any one time, as it shall deem most conducive to the interests of the state and the welfare of the prisoners.

CONVICTS, RIGHTS RESERVED IN LEASING LABOR OF.

Section 4939. In every contract made pursuant to the authority herein conferred there shall be reserved to said board and to the warden and each and every of his subordinates full power and authority to prevent the demanding or imposition of unusual or serve labor or labor whereby the health or safety of the convicts may be impaired or jeopardized; and the said board may, from time to time, prescribe all needful rules for the government and conduct of all contractors, their overseers and agents in their relations to the convicts, and may require a summary dismissal of any individual employed by any contractor in said prison whenever it shall appear that the presence or the conduct of such individual is prejudicial to the discipline of the prison or the welfare of the convicts.

CONVICTS, MONEY FOR DESERVING.

Section 4942. Whenever any convict, * * * diligence in labor * * * shall surpass the general average of convicts the state board of control may, in its discretion, compensate him therefor by the allowance of a sum of money out of his earnings or otherwise, and said board may adopt rules for the payment to deserving convicts, on their discharge or while in prison, of such sum as it may see fit.

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PART II.

SYNOPSIS OF THE REPORTS OF THIS BUREAU

FROM 1883-84 TO 1897-98, INCLUSIVE.

SYNOPSIS OF THE REPORTS OF THIS BUREAU.

The purpose in this part of the ninth biennial report of this bureau is to present a brief synopsis or statement of what has been accomplished by the bureau since it came into existence, as shown in its various reports. Before going into details as to what has thus been done a brief statement of the organization and growth of the bureau may be in place.

This bureau was created in 1883. Previous to that year, particularly in 1881 and 1882, several attempts to establish a bureau of this kind seem to have been made. For some reason, however, probably because as yet there had been no great demand for it, these efforts failed in their object; but the work thus began soon bore fruit. In January, 1883, Governor J. M. Rusk, in his message to the legislature, made the following recommendation:

"The time has arrived when means should be provided for gathering accurate monthly crops and live stock reports during the growing season, and complete labor statistics, and their prompt circulation among the people. For this purpose I would recommend that you provide for a state bureau of agriculture and labor statistics."

This was the first recommendation of this kind in this state and it seems to have met with a favorable reception, not only throughout the state, but by the legislature to which it was directed; for the same legislature enacted the following law which became chapter 319, laws of 1883, and is entitled "An act to provide for a bureau of labor statistics:"

"SECTION 1. The governor, with the advise and consent of the senate, is hereby authorized and directed to appoint, as soon after the passage of this act as may be, and thereafter biennially, on the first Monday in the month of February, a suitable person to act as com-

missioner, who shall constitute a bureau of labor statistics, with headquarters at the capitol.

SECTION 2. The duties of such bureau shall be to collect, assort, systematize and present, in biennial reports, to the legislature, on or before the first day of February, once in every two years, statistical details relating to all departments of labor in the state, especially in its relations to the commercial, industrial, social, educational and sanitary condition of the laboring classes; to visit and examine factories, and all other establishments where people are employed at any kind of labor; and for this purpose the commissioner shall have power to enter the same and examine the methods of protection from accidents and the means of escape from fire; and make a record thereof. He shall see to it that all laws regulating the employment of children, minors and women, and all laws established for the protection of the health and the lives of operatives in workshops and factories are enforced; and he shall have power to prosecute offenders against the same in any court of competent jurisdiction. He shall, in his biennial report every two years, give an account of all violations of the above named laws, which he has observed, and his proceedings under the same, together with such remarks, suggestions and recommendations as he may deem necessary.

SECTION 3. All employers of labor shall, upon request, permit the commissioner of the bureau to enter his factory or workshop and make to said bureau of labor statistics, such reports and returns as the said bureau may require for the purpose of compiling such labor statistics; such reports and returns to be verified by the owner or business manager of such concern, and the said bureau, may for such purpose, prescribe blank forms, which shall be furnished by the secretary of state; and every employer who shall refuse to permit the commissioner of the bureau to enter his factory or workshop, or who shall fail to make such report or return, within the time prescribed therefor, shall forfeit the sum of ten dollars (\$10) for each and every day the same shall be delayed. All such forfeits shall be sued for in the name of the state of Wisconsin, and shall be paid into the school fund. The biennial report of the commissioner of labor statistics, provided for by section 2 of this act, shall be printed and distributed in the same manner and under the same regulations as the reports of the executive officers of the state.

SECTION 4. The commissioner of the bureau shall have power to issue subpoenas, administer oaths and take testimony, in all matter relating to the duties herein required of said bureau, such testimony to be taken in some suitable place in the vicinity to which such testimony is applicable. Witnesses subpoenaed and testifying before the commissioner shall be paid the same fees as witnesses before a circuit court, such payment to be made from the contingent fund of the bureau.

SECTION 5. The compensation of said bureau shall be fifteen hundred dollars (\$1,500) annual salary for the commissioner, and a sum not exceeding five hundred dollars (\$500) per annum shall be allowed for his necessary traveling and contingent expenses, which shall include the printing of reports and all other expenses connected with the bureau.

SECTION 6. There is hereby annually appropriated out of any money in the treasury, not otherwise appropriated, a sum sufficient to carry out the provisions of this act.

SECTION 7. This act shall take effect and be in force from and after its passage and publication. Approved, April 3, 1883."

This act, through which a bureau of labor statistics was thus created, was published or went into effect the twelfth day of April, 1883, and the first commissioner, who immediately assumed the duties of his office, was appointed a few days later, or April 20th, the same year.

In perusing this act it is noticed at once that the recommendation of the governor was not strictly carried out. The governor recommended a bureau of agricultural and labor statistics. The legislature created a bureau of labor statistics and factory inspection.

This law imposed upon the commissioner two kinds of duties, differing greatly, at least in many respects, as to their nature. The first of these consisted of collecting, tabulating and presenting statistics relating to labor; the second, of enforcing all laws regulating the employment of children, minors and women, etc., or in general, the condition of labor in factories and workshops.

While these laws were not as numerous and stringent as today, a great deal of time and labor was required to carry out and enforce them. That the task of the commissioner was not an easy one becomes particularly plain when it is borne in mind that the state is large, its manufacturing industries scattered and of no mean proportion, and that the duties implied frequent visits to each establishment. Regardless of these facts, however, the law provided for neither clerks nor inspectors and for only \$500 per year for contingent expenses. As the commissioner was thus limited to his own labor alone no arguments are necessary to show that the duties were clearly beyond him. He succeeded, nevertheless, in issuing a very creditable report in which the situation is clearly explained. This, together with his strong

recommendations for assistance, resulted in the act known as Chapter 247, Laws of 1885, which follows:

SECTION 1. Chapter 319, laws of 1883, entitled, 'An act to create a bureau of labor statistics,' is hereby amended by striking out all after the enacting clause and substituting for the part struck out the following: There is hereby created a bureau of labor, census and industrial statistics, with headquarters in the capitol building, for which stationery, postage, expressage, printing and facilities for transacting business shall be furnished the same as for other executive departments.

SECTION 2. The governor, with the advice and consent of the senate, shall appoint quadrennially on the first Monday of February, a competent person to be commissioner of said bureau.

SECTION 3. The said commissioner shall have power to appoint a deputy at a salary not to exceed one hundred and twenty-five dollars per month, who, when acting for or instead of said commissioner, shall have and may exercise equal power and authority. He may also appoint a clerk at a salary not exceeding one hundred dollars a month, and a factory inspector who shall reside in Milwaukee, and be and work under the direction and control of the commissioner, at a salary of twelve hundred dollars per year and actual traveling expenses, stated under oath, while engaged in bureau work outside of Milwaukee.

SECTION 4. The duties of the said commissioner shall be, to collect, collate and publish statistics and facts relative to the manufactures, industrial classes and material resources of the state; and especially to examine into the relations between labor and capital, the means of escape from fire and protection of life and health in factories and workshops, the employment of illegal child labor, the exaction of unlawful hours of labor from women and children, the educational, sanitary, moral and financial condition of laborers and artisans, the cost of food, fuel, clothing and building material, the causes of strikes and lockouts, as well as kindred subjects and matters pertaining to the welfare of industrial interests and classes.

SECTION 5. The commissioner, his deputy, or the factory inspector shall have power to enter any factory, or workshop in which labor is employed, for the purpose of gathering facts and statistics, or of examining the means of escape from fire, and the provisions made for the health and safety of operatives in such factory or workshop; and in case the officer of the bureau shall discover any violations of or neglect to comply with the laws in respect to child labor, hours of labor for women and children, fire escapes, and similar enactments now or hereafter to be made, he shall notify the owner or occupant of such factory or workshop, in writing, of the offense or neglect, and if such offense or neglect is not corrected or remedied within thirty days after the service of the notice aforesaid, he shall lodge formal

complaint with the district attorney of the county in which the offense is committed or the neglect occurs, whereupon that officer shall proceed at once against the offender according to law.

SECTION 6. The factory inspector, or any officer of the bureau, may examine hotels and lodging or boarding houses, for the purpose of discovering whether they are properly equipped with lawful fire escapes; and he may post in any hotel, lodging or boarding house so examined the laws upon this matter, together with his official statement as to whether the said laws are fully complied with by said hotel, lodging or boarding house; and any hotel, lodging or boarding house keeper, or other person, who shall mutilate, destroy or remove from any building or buildings the said laws or statement so posted, shall be fined fifty dollars for each and every offense, upon complaint of any officer of the bureau or any citizen. Whenever any hotel, lodging or boarding house, that has been posted as not complying with the terms of the law in respect of fire escapes, shall be properly provided and equipped with lawful fire escapes, and the bureau shall be notified thereof, the commissioners shall at once order a new statement setting forth that fact, to be posted in said hotel, lodging or boarding house; and the bureau shall keep a record of all buildings so examined and posted.

SECTION 7. The factory inspector or any officer of the bureau may post in any factory or workshop examined by him the laws now or hereafter to be made in respect of child labor, hours of labor, fire escapes, or other matter pertaining to the health and safety of artisans; and if the owner, manager or proprietor of such factory or workshop, or his agent, or any person whomsoever, shall remove, destroy or mutilate the laws so posted, he shall, on complaint of any officer of the bureau, or any citizen, be fined fifty dollars for each and every offense.

SECTION 8. The said commissioner shall have power to prescribe blank forms, and transmit them to employers, which shall be filled out clearly and completely, under oath, by the persons to whom they are sent, with the facts, statistics and statements asked for, and returned to him within such reasonable time as he may fix. In case any owner or occupant, or his agent, shall refuse to admit any officer of the said bureau to his workshop or factory, he shall forfeit the sum of ten dollars for each and every offense, and if he shall, through his agent or otherwise, neglect, fail or refuse to fill out the said blank forms, and verify and return them as required, he shall forfeit the sum of ten dollars for each and every day the said blanks may be so delayed beyond the time fixed by the commissioner for their return. The forfeits named and provided in this act shall be sued for in the name of the state by the district attorney of the proper county, upon complaint of any officer of said bureau, or any citizen, and shall be paid into the school fund.

SECTION 9. There shall be provided a seal of office for the use of the bureau, and the commissioner and his deputy, for the purpose of making any investigation contemplated by this act, shall have power to administer oaths, take testimony and subpoena witnesses, which witnesses shall receive the same fees as are allowed to persons testifying in circuit courts, to be paid out of the contingent fund of the bureau; provided, however, that no person subpoenaed by the said commissioner or his deputy shall be compelled to go outside of the city or town in which he resides to testify in behalf of such investigation.

SECTION 10. The commissioner shall report biennially to the governor, accompanying his report with such suggestions and recommendations as may be deemed wise and proper. The said report shall be printed and distributed according to the provisions of the law governing the printing of other state reports.

SECTION 11. The compensation of the said commissioner shall be two thousand dollars per annum, and a sum not exceeding one thousand dollars per annum for traveling and contingent expenses, and a further sum of fifty dollars per annum for the purchase of books and periodicals on labor and industrial matters for the bureau library. There is hereby appropriated annually, out of any moneys in the treasury not otherwise appropriated, a sum sufficient to carry out the provisions of this act.

SECTION 12. All acts and parts of acts conflicting with this act are hereby repealed.

SECTION 13. This act shall be in full force and effect from and after its passage and publication. Approved April 4, '85."

This law was passed as an amendment to the act of 1883 and went into effect on the fourth day of April, 1885. The same legislature also enacted special laws relating to fire escapes on factories and workshops three or more stories high, to the outward swinging of doors on factories and public buildings, and amended and greatly enlarged the law already in force relating to protection in hotels, inns, boarding and tenement houses in case of fire. In addition to the laws already upon the statute books, most of which related to the employment of women, minors and children, and safety as regards the sanitary condition affecting employes, this gave Wisconsin a good start in legislation of this kind.

In comparing the provisions in the above act with those in the former a long step forward may be noticed. Not only did the later act provide for a deputy commissioner, one clerk, and

one factory inspector and an increased contingent fund, but it greatly broadened the duties under the bureau. In short, it provided for a fairly complete system of statistical work and factory inspection. With the exception of a revision as to its phraseology, the reduction of the term of office from four to two years, the abolishing of the contingent fund and substituting for it necessary traveling expenses, the increase in clerks and inspectors, and of a few minor provisions, this law is still in force. As far as the statistical department is concerned no new provisions of any importance has been added since.

In relation to factory inspection, however, there have been many changes since. The first occurred at the next session of the legislature, two years later, or in 1887, when the inspection laws were greatly enlarged. Authority was also given to appoint two inspectors instead of one; and the power of the inspectors to enforce their order and prosecute offenders was increased.

Instead of giving the laws passed at this session a brief summary of all the laws of this kind enacted in this state up to this time is included. As the laws now stood it was the duty of the bureau to see to it

That factories, workshops, hotels and lodging houses more than two stories in height are provided with proper fire escapes.

That factories, workshops, churches, school houses, hotels, etc., erected since March, 1885, shall have outward swinging doors or that swing both in and out.

That every hotel or inn designed for the occupancy of fifty or more persons shall keep on service not less than one efficient watchman from 10 o'clock, p. m., until 5 o'clock, a. m., during each and every night.

That no children under twelve years shall be employed in any factory or workshop.

That no children under fourteen years shall be employed more than ten hours per day, or more than seven months in any one year.

That no women or children shall be compelled to work more than eight hours per day in any factory or workshop.

That in every hotel designed for the occupancy of 50 or more persons there shall be posted in every room a brief and accurate statement of all means of safety and escape in case of fire.

That no architects shall make plans for or superintend the erection of school house, church, hall, factory, hotel, etc., without providing

in said plans the fire escapes and outward swinging doors required by law.

That elevators used for carrying freight or passengers, or both, shall be examined, and those found to be defective or unsafe condemned.

That bull-wheels, fly-wheels, tumbling-rods, elevator wells, stairways, shafting or dangerous machinery of any kind shall be guarded and protected, so as not to hazard the safety of workmen and others.

That the inside walls or casings of every elevator for the conveyance of passengers to and from the stories of any hotel designed for the accommodation of fifty or more persons above the ground floor shall be constructed of fire-proof material throughout.

That no corporation, person or persons shall employ or put to work in any factory, workshop, place of employment or room more persons than the law of health will warrant, as shall be determined by the board of health.

That every stationary vat, pan or other structure containing molten metals or hot liquids, shall be surrounded with proper safeguards for the prevention of accidents to those employed near them.

In point of factory legislation Wisconsin now compared favorably with most other states in which factory inspection had been established. The amount of labor involved, however, in enforcing these laws, was enormous, a great deal more than two inspectors, in spite of their best efforts, could perform. On this point the commissioner then in charge also makes the following comments:

"If there is any one into whose hands this volume may fall who has personally visited every city and village in this state, to say nothing of carefully inspecting all the chief shops, hotels and buildings in those towns, and the myriad pieces of machinery in those shops, he will understand better than he can be told, how manifold and interminable are the labors of this department, independent of traveling, gathering and tabulating statistics, correspondence, and prosecuting lawsuits. Besides, it should be remembered that our work is like that of the gardener who cannot hoe over his patch once for the season, but must, in order to keep the weeds down, turn about and go over it again and again. The officers of this department can never cease their goings and comings, never lift their eyes from the field of inspection. New institutions are springing up in every quarter of the state and changes are constantly being made in old ones, so that our duties are never-ending as well as always multiplying and ever expanding. Besides, we are required to know almost everything. We must understand how to deal pleasantly and successfully with the mul-

titudinous characters that make up our population, meet their subterfuges, expose their tricks, and watch the shrewdness of those who propose to evade or disobey the laws; and do it, too, without betraying our knowledge of their motives and purposes. We must be able to make proper application of the same laws to hundreds of different cases, and to know the dangerous features of every kind of machinery and mechanical appliances in use in the state, as well as to tell exactly how to remove or guard against those dangers; as health, limb and life thus depend upon what we do or fail to do, the responsibility is by no means light or pleasant."

From 1887 to 1899 several acts were enacted. Among these the most important are: The act of 1889 which raised the age at which children may be employed in factories and work-shops from twelve to thirteen years, except in cases where the county judge had granted special permits; the two acts of 1891, one of which raised the age of employment for children, unless upon special permits, to fourteen years; the other requiring signal arrangements between engineer and workmen where machinery is used; the act of 1895, providing for safer fire escapes, as well as for standpipes in connection with such escapes on buildings three or more stories in height and intended for the occupancy of twenty-five or more persons; the two acts of 1897 which, respectively, relates to the sale in this state of goods made in prisons of other states, and to authority to appoint two additional clerks for the bureau. While the duties of the inspectors were thus considerably increased during this period, the inspection service, which at no time had been strong enough to properly perform one-half of its duties, was left unchanged.

For twelve years the duties of the inspectors were constantly increased by new legislation. During the larger part of this time there was also a rapid growth in the manufacturing interests of this state. The duties of the factory inspectors were thus increased from two chief sources. As said already, two inspectors were far from sufficient before this increase took place. From these facts it is easy to see what the chances were for a thorough enforcement of the factory laws, particularly towards the latter part of this period. But there are other facts which show even more plainly that two inspectors were not enough. To fully enforce the frequent visits are necessary

to every factory and workshop, to practically every village and city school house, every church, hall, business block and most other public buildings in the state. Let us see what this means. The manufacturing industries alone occupy from twelve to fourteen thousand buildings. The other buildings included together number nearly that many. These buildings are scattered over an area four hundred miles in length and more than of half this in width. In many of these buildings there are also so many things to look after as to occupy a whole day of the inspector at each visit. That this work requires more than two inspectors is too obvious for argument. Being aware of the condition in this respect the bureau, especially in 1897-98, devoted the greater part of its efforts to the more important provisions only. In this way, in spite of the many disadvantages, it was able to accomplish at least some good, and also to show the necessity of more inspectors as well as of further restrictions in the conditions of employment in factories, especially when children are concerned. Strong recommendations along this line were also made to the governor, the Honorable Edward Scofield, who, in January, 1889, devoted a part of his message to the legislature to this subject, especially recommending additional inspectors.

This message was a turning point in factory legislation in Wisconsin. The recommendation was timely and the legislature acting upon it enacted a law under which the number of inspectors can be increased from two to seven. For the first time in its history this bureau is now in a fair position to carry out the work for which it was intended. The legislature, however, did not stop with this. Besides authorizing more inspectors, which was the main contention, it enacted several other laws of the greatest importance to the wage-earners and the people of this state generally. Among the more important, as well as those which greatly affected or increased the duties of this bureau may be mentioned Chapter 274, restricting the employment of children; Chapter 232, regulating manufacture under the so-called sweating system; Chapter 189, requiring suction devices on emery wheels where dust is generated; Chapter 79, regulating the conditions under which cigars shall be manufactured, and Chapter 77, requiring employers of females to furnish seats for them.

These are only a few of the laws enacted in the interest of the working classes by the legislature of 1899, but they go a good way towards showing the position of that body with reference to such legislation. On the whole, it can truthfully be said that it passed more laws in the interest of labor than have ever been passed at one session before in this state.

In order to convey, in brief form, some idea of the situation in this state today (1899) as regards factory legislation, the more important provisions in the factory acts have been summarized as follows:

Children.—No child under fourteen years of age shall be employed in factories, workshops or mines, except upon limited permit which may be granted children over twelve in very needy circumstances; nor in mercantile establishments, laundries, telegraph, telephone and public messenger service, except during vacation of public schools, or upon special permit. No child under sixteen years shall be employed in the places mentioned unless an affidavit, by parent or guardian, as to its age, with record of same, is kept on file by employer where such child is employed; no such child shall be employed after nine o'clock at night, nor before six o'clock in the morning, nor have the operation or management of any elevator.

Machinery, etc.—All dangerous machinery, all vats, pans and other structures containing molten metals or hot liquids shall be securely guarded or fenced. Signals must be provided between engineer and work-rooms where machinery is used. Suction devices or exhaust fans must be provided on emery wheels, grindstones where dust is generated; no such wheel shall be used which is known to be defective.

Stair ways, etc.—All dangerous stair, elevator, or other openings must be securely fenced or guarded.

Fire Escapes.—Every factory, workshop, or other structure, three or more stories high, in which twenty-five or more persons are employed, every hotel, inn, boarding house, storehouse, tenement building three or more stories high containing sleeping apartments, offices, assembly halls, workrooms or rooms intended for amusements, all or any of which are intended for occupancy by twenty-five or more persons, shall be provided with metallic fire escapes, and, in places with water works and where automatic sprinklers are not provided, with three-inch standpipes and hose connections.

Doors or Exits.—Doors or exits from factories, hotels, school houses, churches and other public buildings shall swing out, or in and out.

Elevators.—Elevators or hoists used for carrying passengers and freight shall be kept in safe condition; inside walls or casings of elevators used for carrying passengers to and from upper floors in

stores, hotels, and public buildings, shall be constructed of fireproof material; owner shall be held liable for any accident occurring from the use, without necessary repairs, of any elevator condemned by the inspector; no child under sixteen years shall have the operation or management of any elevator.

Watchmen; notice of means of exit.—Besides necessary fire escapes and standpipes, every hotel, inn, boarding house, store house, tenement building containing one hundred rooms or more shall have on duty between ten o'clock p. m., and five o'clock a. m., at least one efficient watchman every night the building is occupied; notices of the means of escape in case of fire shall also be posted in every room; red lights shall also be kept burning at head of every stairway and escape above first floor.

Seats for Female Employees.—Employers shall provide seats to be used by female employees when practicable during working hours.

Sanitary Condition.—All workrooms shall be kept in a cleanly state and provided with good ventilation; overcrowding is prohibited.

Hours of Labor.—Eight hours shall constitute a day's work where no understanding to the contrary exists.

Cigar Factories and Sweat shops.—Besides the provisions already enumerated, special laws have been passed regulating the manufacture of cigars and the conditions under which manufacture under the so-called sweating system is to be carried on.

This embraces the more important provisions in the factory laws enacted up to and including 1899 and which are now in force, and shows quite fully the condition in this state with respect to legislation of this class. As few of these provisions are, as a rule, lived up to unless through the efforts of inspectors or other officers, the above summary also conveys a fairly good idea of the extent and importance of the duties which come under factory inspection.

In thus pointing out a few of the leading facts in the development of this bureau little effort has been made to separate those which relate more distinctly to the gathering and presentation of statistics from those which concern the enforcement of the factory laws. The reasons for this are not far to seek. The intention of the legislature which created this bureau was plainly to combine these two classes of duties under one head, and the bureau was therefore organized upon this basis. The result of this is that the two departments have grown up together and are so intimately connected that they cannot be told apart.

While it is true that the inspectors are devoting their entire time to inspecting, the directing, as well as the handling of their reports, and even more or less inspecting, has been done by the force in the bureau. Improvement in one direction is therefore shared by the other and in such a way that it is hard to say which side is ahead.

As to whether it is in the interest of this work as a whole that these two classes of duties should be combined in one bureau may be open to dispute. A great deal can certainly be said on both sides. In this case, however, experience seems to favor the present arrangement. Among the reasons which point to this is, in the first place, the matter of expenses. To separate the inspection from the statistical work would mean the establishment of another department or bureau, and this would in turn mean greater expenses, as one department can be managed much cheaper than two. A great deal of statistical data can also be gathered through the inspectors while making their regular visits; and in a state where the industries are scattered, necessitating much traveling, this also means a saving not to be overlooked. On the other hand, it is perhaps possible that the two kinds of duties may, at least in some cases, come into conflict with each other, and for this reason cannot be satisfactorily discharged by the same persons or office. As yet, however, we have met with no case of this kind, but on the contrary have found that the enforcement of one provision creates greater respect for all the others. A separation of the two kinds of work, however, would enable the head of each to give his undivided attention to one kind of duties only. As to whether this would be of any greater benefit to the state depends entirely upon the persons in charge.

While the two kinds of duties which thus come under the bureau are very closely connected they have been kept apart in the reports. By this is not meant a complete separation because this would not have been possible, but simply this, that matter which related more distinctly to one part or the other is presented accordingly. This makes it possible, in following pages, to show what has been done under each part.

Thus, under "Statistics" is presented a brief summary of the results of the several statistical investigations made by this bu-

reau from the date of its establishment and up to and including the eighth biennial report, that of 1897-98. These summaries are arranged by reports and for the first few the analyses in the special report of U. S. commissioner of labor have been closely followed.

Under "Factory Inspection" is presented a summary of what was accomplished through the factory inspectors during the same period. This is also made by reports and is even briefer than the one for the statistical part, only the main features being included.

STATISTICS.

As explained already this part is devoted to the statistical parts of the reports of this bureau, and embraces besides a summary of the various investigations a presentation of the course of wages in the different industries and skilled trades from 1888 to 1897 inclusive, and the proportion of stock and wages of the total value of the products in manufacturing in this state for 1895-96-97. In some cases this summary is limited to an analysis of the contents only, but in most cases the more important conclusions are also included.

FIRST BIENNIAL REPORT, 1883 AND 1884 (303).

In this report the following subjects are considered: Labor bureaus, federal statistics, state prison and other institutions, apprentices, trades and labor unions, strikes, natural diversity of occupation, statistics of manufacture, state products, prices and earnings, report on Pullman investigation.

Of "federal statistics," "statistics of manufacture" and "prices and earnings," the descriptive part consists of statistical data; of the other subjects the consideration is textual. In both cases, however, the conclusions are of such a nature that they cannot very well be boiled down into a sufficiently small space to be reproduced here. The consideration of the first biennial report is limited to the following analysis, taken, in part, from the third special report of the U. S. bureau of labor and partly from the report.

Labor Bureaus (19 pages).—This gives a sketch of the establishment of labor bureaus in the states, with lists of the bureaus; an account of national bureau conventions, and a copy of the act creating a bureau of statistics in the state.

Federal statistics (38 pages).—This comprises statistical tables from the United States census of 1880, giving the population of the state by counties, for each decade, from 1840 to 1880; the population by counties, according to nationality, sex, age periods and color; the population by occupations, according to sex, nativity and age periods; the population by minor civil divisions; the number of manufacturing establishments, by counties and industries, their capital, the number of employes, according to sex and age periods; the amount paid in wages, the value of raw materials and the product, with a recapitulation, and the same information for Milwaukee alone; the number and value of farms in the state, by counties, the number of acres of improved land, the value of live stock, the value of farming implements and machinery, and the amount and value of farm productions by articles; and for a number of selected industries, the proportion using steam and water power.

Wisconsin state prison and other institutions; convict labor (34 pages).—This is devoted to a consideration of the different penal and reformatory institutions of the state, with illustrative tables giving the number of prisoners in the United States, by states, and the number at work, classified by sex and by method of employment; the fixed task of prisoners at the state prison, showing how labor is divided; the earnings of free labor in the manufacture of boots and shoes; the number of boys committed to the state industrial school since its organization, by counties, each year, from 1860 to 1884, and the factory product of said school, by articles, for the year ending Oct. 1, 1884; the number of commitments to the Milwaukee county house of correction, by crimes committed and by former occupations, and the number of illiterates among them, by nationality, the social relations and drinking habits of the convicts and a copy of the contract for prison labor.

Apprentices, etc. (28 pages).—This discusses the apprenticeship system, industrial education, the truck system of wages, the

relation between employer and employe, the subject of working-girls, etc.

Trades and labor unions (22 pages).—This gives an account of the principal labor organizations in the state.

Strikes (18 pages).—This gives a brief account of the most important strikes which occurred in the state in recent years, with reference to their causes, duration, and results.

Natural diversity of occupations (19 pages).—This presents a consideration of various subjects relating to labor, such as diversity of occupations, child labor, laws of the state regulating hours of labor; hours of labor of women and children; relating to mechanics' and to contractors' liens; securing the wages of railroad laborers, etc., on Milwaukee public works; and providing for exemption from execution and attachment. A short table gives, by counties, the number of three story factories in the state with and without fire escapes. A consideration of the free schools and compulsory education is also given.

Bureau statistics of manufacturers, by counties, 1884 (33 pages).—Under this heading are given statistical tables showing, by counties and industries, the number of establishments, the number of employes (male and female), their average weekly wages, the amount of capital invested, the value of the raw material and of the product, the number of weeks in operation, etc., with a recapitulation by counties; for a number of selected industries, the number of establishments and the capital invested, the number of employes and their aggregate wages, and the number of wage earners, by counties, classified as apprentices, married males, married females, wage earners, by counties, classified as apprentices, married males, married females, males over 14, females over 14, etc.

This investigation includes returns from 903 manufacturing establishments. The capital employed by them amounted to \$56,049,432.68, and their product for the year was valued at \$61,092,132.28. In obtaining this product, \$27,369,136.25 was expended for raw material and \$14,276,713.60 for labor.

These establishments employed 35,859 males, 3,501 females, or a total 39,360 persons. Of these 380 males and 46 females were under 14 years of age and 538 persons were apprentices. Of the total number of workers 6,230 owned homes and 6,709

rented homes, which indicates that about 13,000 had families to support.

State products (17 pages).—This is a textual and statistical consideration of different industries of the state. The tables give the log product, by districts, for 1883-84; a list of lumber mills showing the lumber and shingle cut in 1883, and the number of logs left in mills or store booms; the production of liquors and cigars, and the amount of revenue collected, by districts, in 1883; and the number of men, classified by occupations, and their wages, employed by each of the several railroad companies of the state.

Prices, earnings, etc. (36 pages).—This comprises statistical tables with textual comments, giving the prices of food, clothing, fuel and other articles in the state, each year, from 1880 to 1884; from consular reports, the prices of food at Liverpool, Vienna, Chicago and Milwaukee, in 1884; the weekly wages of workingmen in similar occupations at London, Vienna, Chicago and Milwaukee, in 1884; the price of wood and coal at Milwaukee each month, from 1880 to 1884; the amount of capital, the total amount of wages paid, and the products of 333 establishments considering the tariff beneficial and of 64 establishments considering it detrimental; the number of business failures in the state each year, from 1880 to 1884, with the amount of assets and liabilities; extracts from Bradstreets, showing the estimated number of employes in 1882, in various states and cities, compared with 1880, and the number of persons engaged in striges in the United States in 1882.

Report on Pullman investigation (24 pages).—Under this topic is presented a joint report by the chiefs and commissioners of the various bureaus of labor of an investigation of the economic experiment conducted by the Pullman Palace Car Company. The sketch includes its history, methods of construction, a table showing its growth in population, and a brief discussion of wages, rents, living expenses, health, etc.

From the statistical tables of prices, of necessities from 1880 to 1884 inclusive, in this part the following presentations have been compiled:

GROCERIES.

Prices in 1880, '81, '82, '83 and 1884 of a given quantity in each case, of 47 articles of groceries.

Articles.	1880.	1881.	1882.	1883.	1884.
Allspice (ground) per pound.....	.25	.25	.25	.20	.20
Apples (dried) per pound .....	.06	.10	.10	.10	.06
Bacon, per pound .....	.10	.10	.12	.12	.12
Beans, per bushel	1.25	2.00	2.10	2.40	2.40
Blackberries, per pound .....	.10	.10	.12	.12	.10
Borax, per pound .....	.20	.20	.20	.20	.20
Butter (dairy), per pound .....	.15	.18	.20	.20	.20
Cheese, per pound.....	.12	.12	.12	.12	.12
Chicory, per pound.....	.10	.10	.10	.10	.10
Candles, per pound.....	.15	.15	.15	.15	.15
Cinnamon (ground), per pound.....	.30	.33	.30	.30	.25
Cloves, per pound.....	.40	.40	.40	.30	.30
Coffee (green Rio), per pound.....	.16	.16	.155	.115	.105
Corn (2-pound cans), per can.....	.15	.13	.12	.12	.12
Corn meal, per pound .....	.02	.02	.02	.02	.02
Crackers, per pound .....	.08	.08	.08	.07	.06
Currants (dried), per pound.....	.08	.08	.08	.08	.06
Flour, XXX, per barrel.....	6.50	6.50	6.00	6.25	5.00
Flour (graham), per pound.....	.03	.03	.03	.03	.03
Fish (salt white), per pound .....	.06	.10	.10	.08	.08
Fish (trout) per pound.....	.05	.05	.07	.05	.05
Hams (salt) per pound.....	.12	.15	.14	.14	.14
Herring, per pound.....	.04	.04	.04	.04	.04
Lard, per pound .....	.10	.11	.12	.12	.12
Matches, per 1,000.....	.35	.35	.35	.30	.10
Molasses (common), per gallon.....	.35	.35	.36	.36	.25
Meal (corn), per pound.....	.02	.02	.02	.02	.02
Meal (oat), per pound.....	.04	.04	.04	.04	.04
Oil (legal test), per gallon.....	.14	.12	.12	.10	.10
Onions, per bushel.....	.90	1.00	.75	.40	.35
Peaches (unpared), per pound.....	.05	.07	.07	.10	.08
Peas (green), per pound.....	.02	.02	.02	.02	.02
Peas (split), per pound .....	.03	.03	.03	.03	.03
Potatoes, per bushel.....	1.00	2.00	.90	.50	.40
Pepper (ground), per pound.....	.30	.30	.30	.25	.20
Prunes (dried), per pound .....	.08	.06	.10	.08	.07
Raisins, per pound.....	.08	.08	.10	.09	.12
Salt, per pound.....	.01	.01	.01	.01	.01
Soap, per pound.....	.06	.06	.06	.06	.06
Shoulder (salt), per pound.....	.08	.09	.10	.09	.10
Sugar (granulated), per pound.....	.10	.10	.096	.091	.074
Sugar (light brown), per pound.....	.085	.085	.085	.079	.062
Syrup (best), per gallon.....	.60	.60	.60	.50	.50
Tea (black), per pound.....	.50	.50	.50	.40	.40
Tea (green), per pound.....	.50	.50	.50	.40	.40
Tomatoes (3-pound cans), per can.....	.14	.12	.12	.12	.10
Vinegar, per gallon.....	.15	.15	.15	.15	.15
Total	\$16.175	\$18.135	\$16.490	\$15.605	\$13.651

Groceries: The first table in order shows the prices for five years, 1880 to 1884 inclusive, of a given quantity, in each case, of forty-seven articles or kinds of goods commonly termed groceries. In looking over this table it will at once be noticed that, in by far the greater proportion of articles, there was a gradual decline in prices from 1881 to 1884, the highest prices being generally found in the former year, the lowest in the latter. This is particularly well reflected in the totals, where we find that in

1880 all the articles included could have been bought for \$16.17, in 1881 for \$18.13, in 1882 for \$16.49, in 1883 for \$15.60, and in 1884 for \$13.65. The difference between the first and last year included is thus \$2.52, and between the highest and lowest year \$4.48.

Meats: The next table gives the prices for five years of one pound, in each case, of nineteen different kinds of meat. The grade of this meat is evidently not the highest, but the table reflects with considerable accuracy the course of prices during this period. As in the cases of groceries, the prices vary somewhat from year to year, though in this case there has, on the whole, been no fall. The course prices for a pound of each kind were \$1.52, \$1.72, \$1.96, \$1.79 and \$1.69 for the different years beginning with the first in order. In this case the lowest price thus prevailed in 1880 and the highest in 1882. The tendency was upward until the later year and then downward. While the difference is slight the price of meats rather increased during the period.

MEATS.

Prices in 1880 to 1884 inclusive, of a given quantity in each case of 19 different kinds of meat.

Articles.	1880.	1881.	1882.	1883.	1884.
Porter house steak.....	.11	.11	.125	.11	.10
Sirloin steak .....	.11	.11	.125	.11	.10
Round steak .....	.10	.10	.125	.10	.10
Roast beef .....	.08	.08	.10	.09	.08
Shoulder beef .....	.07	.07	.08	.07	.07
Plate beef .....	.06	.06	.06	.06	.06
Veal	8-10	8-12	8-12	8-12	8-12
Mutton legs	7-10	.10	.10	8-10	7-09
Mutton loins and racks.....	7-09	8-09	.09	6-08	6-07
Mutton breast and necks.....	3-06	4-06	5-06	5-06	4-06
Pork loin	7-09	.10	11-12	9-11	9-12
Pork shoulder	6-07	9-10	10-12	9-10	7-09
Pork trimmings .....	.06	.08	.08	.08	.07
Pork shanks .....	.02	.03	.04	.05	3-04
Pork ribs	3-04	.05	.07	5-06	5-06
Sausages	8-10	9-12	10-13	8-10	7-10
Hams	8-10	.125	12-14	12-14	11-14
Bacon .....	.09	.10	.13	.12	.11
Lard .....	.09	.12	.14	.14	9-12
Totals	152	171.5	195.5	179	169

Clothing: In the next table are found the prices of fourteen articles of clothing, such as workingmen generally wear. This table is perhaps the most interesting in the lot as it shows a

steady decrease, from year to year, in the price of practically every article included. How large the decrease was is best shown in the totals for each year. In 1880 the articles included commanded a price of \$91.00; for the four succeeding years it ranged \$88.90, \$80.30, \$70.70, \$62.00. Between the first two years there was thus a fall of \$2.10, between the first and last the fall amounted to \$27.00. The benefits which must have accrued to the wage earners from this source alone must therefore, when the whole state or country is considered, have been great; and would have gone a good ways towards offsetting any decrease in money wages that might have taken place during this period.

CLOTHING.

Prices in 1880 to 1884 inclusive, of a given quantity, in each case, of 14 different kinds of clothing or working men's suits.

Articles.	1880.	1881.	1882.	1883.	1884.
Coats, working	\$8.00	\$8.00	\$7.00	\$6.00	\$5.00
Coats, plain dress	10.00	10.00	9.00	8.00	8.00
Pants, working	3.00	3.00	2.50	2.50	2.00
Pants, plain dress	6.00	6.00	5.50	5.00	4.50
Suits, working	15.00	15.00	13.00	11.00	9.00
Suits, plain dress	18.00	18.00	16.00	15.00	14.00
Winter undershirt .....	.875	.875	.75	.65	.50
Winter drawers .....	.875	.875	.75	.65	.50
Overcoats	13.00	12.50	12.00	10.00	8.00
Stockings .....	.65	.65	.55	.50	.40
Mittens, wool .....	.85	.75	.75	.65	.50
Satinet suits	8.00	7.00	7.00	6.00	5.00
Satinet pants	2.25	2.25	2.00	1.75	1.50
Satinet coats	4.50	4.00	3.50	3.00	3.00
Totals	\$91.000	\$88.900	\$80.30	\$70.70	\$62.00

Boots and Shoes: This table gives the prices, during the five year period, of a given quantity, in each case, of the different kinds of shoes such as are usually worn by workers and their families. In this case, as in that of clothing, there was a steady reduction in prices from year to year. Of course in the very nature of things the fall here could not have been as great as for clothing, but the percentage is respectable. The quantities included exchanged for \$232.10 in 1880, for \$226.05 in 1881, for \$219.00 in 1882, for \$213.70 in 1883, for \$207.40 in 1884. From the first to the last year there was thus a fall of \$24.70.

BOOTS AND SHOES.

Prices in 1880 to 1884 inclusive, of a given quantity in each case, of 17 different kinds of boots and shoes.

Articles.	1880.	1881.	1882.	1883.	1884.
Men's boots:					
Cowhide, per dozen.....	\$37.00	\$36.00	\$35.00	\$34.00	\$33.00
Kip, per dozen	40.00	39.00	38.00	37.00	36.00
Calf, per dozen	49.00	48.00	47.00	46.00	45.00
Men's shoes:					
Cowhide, per pair	1.45	1.40	1.35	1.30	1.25
Kip, per pair	1.70	1.65	1.60	1.55	1.50
Calf, per pair	2.20	2.15	2.10	2.05	2.00
Women's shoes:					
Button, per pair.....	2.20	2.15	2.10	2.05	2.00
Polish, per pair	1.90	1.85	1.80	1.75	1.70
Kid button, per pair.....	2.25	2.20	2.15	2.10	2.05
Boys' boots:					
Cowhide, per dozen.....	26.50	26.00	25.50	24.75	24.00
Kip, per dozen	31.00	30.00	28.00	28.00	27.00
Calf, per dozen	31.00	30.00	29.00	28.00	27.00
Children's shoes:					
Cowhide, per pair.....	1.00	.95	.90	.85	.80
Kip, per pair	1.15	1.10	1.05	1.00	.95
Calf, per pair	1.20	1.15	1.10	1.05	1.00
Goat button, per pair	1.25	1.20	1.15	1.10	1.05
Kid button, per pair	1.30	1.25	1.20	1.15	1.10
Totals	\$232.10	\$226.05	\$219.00	\$213.70	\$207.40

Coal and Wood: This table gives, for each of the five years included, the prices of three kinds of coal and three kinds of wood, together with the total for these articles for each year. As fuel is an important item in the family budget, changes in the prices of same means a great deal to most families. As to the prices in this, the same characteristics may be observed as in the preceding tables. In 1880 or the first year in order the prices were generally low. The next year there was a sharp rise. Then again a downward tendency set in and continued up to and including the last year, 1884. On the whole the fall during the period was considerable. This is best seen from a comparison of the totals for each year.

COAL AND WOOD.

Prices in 1880 to 1884 inclusive, of a given quantity in each case, of coal and wood or fuel.

Articles.	1880.	1881.	1882.	1883.	1884.
Coal, Lackawana, per ton.....	\$6.90	\$8.25	\$7.45	\$7.29	\$6.833
Coal, best soft, per ton	6.41	7.21	6.833	6.75	6.125
Coal, medium soft, per ton.....	4.75	5.00	5.333	4.75	4.50
Wood, maple, per cord.....	7.00	8.92	7.79	7.25	6.667
Wood, beech, per cord.....	6.00	7.045	6.79	6.25	5.60
Wood, pine, per cord.....	4.625	5.21	4.75	4.75	4.50
Totals	\$35.685	\$41.635	\$38.946	\$37.04	\$34.225

Summaries: This is the last table in this series and embraces the totals of each of the five preceding tables, together with aggregates for all. This table therefore shows the aggregate prices, for the period, of all the necessities included. That during this period there was on the whole one great fall in prices is beyond dispute. Thus the totals show that the articles embraced commanded a price of \$376.48 in 1880. The next year prices stood about at the same point. From that year up to and including 1884 the decline was rapid. In 1882 they had fallen to \$356.69, in 1883 to \$338.84, in 1884 to \$318.97. The decrease from the first to the last year was therefore \$57.51 or nearly 16 per cent.

Summaries of the five preceding tables.

Articles.	1880.	1881.	1882.	1883.	1884.
Groceries (47 articles).....	\$16.175	\$18.135	\$16.490	\$15.605	\$13.651
Meats (19 kinds).....	1.520	1.715	1.965	1.790	1.690
Clothing (14 kinds)	91.000	88.900	80.300	70.700	62.000
Boots and shoes (17 kinds)	232.100	226.050	219.000	213.700	207.400
Coal and wood (6 kinds).....	35.685	41.635	38.946	37.040	34.225
Totals	\$376.480	\$376.385	\$356.691	\$338.835	\$318.966

Wages: The six preceding tables relate exclusively to the prices on necessities or certain articles of consumption goods from 1880 to 1884 inclusive, and showed among other things that, on the whole, prices of groceries, clothing, boots and shoes, and fuel had fallen, while those of meats of all kinds had either remained stationary or slightly increased. In connection with

this data in this part of the report there are also presentations concerning wages. While these are not as complete as those of prices they are still of interest, and the more important figures have been compiled in the following table:

These tables show, for the years 1880 to 1884 inclusive, the course of wages in about ninety occupations in this state. The table is of necessity so extensive that to make more detailed comparisons of the data in same would require too much space. It can be said, however, that in over twenty per cent. of the occupations the figures indicate an upward tendency in the wages, that in over seventy per cent. it remained stationary and that in five or six occupations only there was a downward tendency. On the whole, therefore, the table must be said to show a slight increase in the rate of wages during this period. Thus with the money wages slightly moving upward and necessities growing cheaper, as the preceding tables plainly show, there must have been a substantial increase in real wages during the period.

Pay of wage-earners during five years.

ARTISANS.	1900.	1901.	1902.	1903.	1904.	REMARKS.
Bakers.....	\$1 33%	\$1 38%	\$1 25-1 50	\$1 25-1 50	\$1 25-1 50	A very few receive \$2.00 per day—such as banquet bakers or caterers.
Barbers.....						Range from \$10 to \$12 per week; very few of the latter.
Bar-tenders.....						Good "prescription" men make from \$15 to \$18 per week; ordinary "beer-slingers" \$8 to \$10.
Basket-makers.....	1 50	1 35	1 30	1 25	1 10-1 20	Willow ware workers make on children's carriages, ladies' working stands, etc., from \$2.25 to \$3 per day; all piece work.
Blacksmiths.....	1 75	1 75	1 75	2 00	2 00-2 25	Bench-workers receive about \$2.25.
Boiler-makers.....	2 50-3 50	2 50-3 50	3 00-4 00	3 00-4 00	3 00-4 00	Helpers \$1.75 to \$2.25.
Book-binders.....	1 50	1 50	1 50	1 50	1 50	Only blank-book makers receive as high as \$2.50 per day.
Book-keepers.....						Mostly pamphlet binding here.
Box-makers.....	1 50	1 45	1 37	1 33	1 30	Difficult to find an average. Wages range from \$10 per week to \$250 per month.
Brass-finishers.....	2 00-2 50	2 00-3 50	2 00-3 00	2 00-3 00	2 00-3 00	Gradual decline in rate of piece-work; average earnings remain about the same.
Brass-founders.....						
Brewers.....	1 25-1 75	1 25-1 75	1 25-1 75	1 25-1 75	1 25-1 75	Only good men receive the wages given.
Brick-layers.....	2 75-3 25	2 75-3 25	3 00-3 50	3 00-3 50	3 00-3 50	Twelve to fourteen hours of hard work.
Broom-makers.....	1 25	1 25	1 40	1 50	1 62%	A good many of the finer workmen receive \$4 during the busy season.
Brakemen.....	1 60-1 95	1 60-1 95	1 60-1 95	1 60-1 95	1 60-1 95	
Butchers.....	1 50	1 50	1 50	1 50	1 50	Finishers make as high as \$2.50 to \$3.00 per day; many only \$1.50.
Cabinet-makers.....	2 00	2 00	2 00	2 00	2 00	Model-makers command as high as \$4 per day.
Carriage-makers.....	1 50-1 75-2 00	1 50-1 75-2 00	1 50-1 75-2 00	1 50-1 75-2 00	1 50-1 75-2 00	Meaning upholstery work.
Carriage-trimmers.....	2 00-2 50	2 00-2 50	2 00-2 50	2 00-2 50	2 00-2 50	Finishers receive as high as \$3 per day the year round.
Carpenters.....	2 00-2 25	2 00-2 25	2 25-2 50	2 25-2 50	2 12%-2 25	Some cutters receive \$25 per week, with here and there one receiving from \$1,400 to \$2,000 per year.
Cattlers (clothing).....	2 50-3 00	2 50-3 00	2 50-3 00	2 50-3 00	2 50-3 00	
Caulkers.....	2 00	2 00	2 00	2 00	2 00	Trade so subdivided as to render it difficult to give an average. Highest pay \$2 per day.
Chair-makers.....	1 00-1 40	1 00-1 40	1 00-1 50	1 00-1 50	1 00-1 62%	Those making creams average about \$14 per week, which may be put down as the maximum; no piece-work except in caramels.
Candle-makers.....	1 00-1 25	1 00-1 25	1 00-1 25	1 00-1 25	1 00-1 25	
Confectionery.....	1 62%-2 00	1 62%-2 00	1 62%-2 00	1 62%-2 00	1 62%-2 00	
Coopers.....	1 75-2 00	1 50-1 75	1 50-1 75	1 40-1 50	1 40-1 50	Beer and soda water business has improved this trade a great deal, during the past 10 or 12 years.
Coppersmiths.....	2 00-2 50	2 00-2 50	2 00-2 50	2 00-2 50	2 00-2 50	

Pay of wage-earners during five years—continued.

ARTISANS.	1880.	1881.	1882.	1883	1884.	REMARKS.
Carriers.....						
Drivers.....						
Drivers and teamsters.....	1 00-1 25	1 00-1 25	1 25-1 50	1 25-1 50	1 25-1 50	Piece-work averaging \$9 and \$10 per week. No average. When they have anything to do at all they receive no less than \$10 per day.
Dyers.....	2 00-3 00	2 00-3 00	2 00-3 00	2 00-3 00	2 00-3 00	Teamsters for stores and horse-car drivers average \$1.60 per day for 14 hours.
Engineers.....	2 00-2 50	2 00-2 50	2 00-2 50	2 00-2 50	2 00-2 50	First-class dyers get \$2 per day.
Engravers.....	2 50	2 50	2 50	2 50	2 50	Railroad engineers average about \$100 per month.
File-cutters.....	1 75-2 25	1 75-2 25	2 00-2 25	2 00-2 25	2 00-2 25	Designers in engraving receive \$3 per day, and more.
Glaziers.....	1 50-2 00	1 50-2 00	1 50-2 00	1 50-2 00	1 50-2 00	A few get \$2 per day.
Glass-blowers:						First class—very few—get \$3; generally combined with house painting.
Window.....						
Bottle.....						
Blod-carriers.....	1 25-1 50	1 25-1 50	3 50-6 00	3 50-6 00	7 50-14 00	Very intricate. The nearest average of window blowers is about \$10 per day.
Horse-shoers.....	1 75-2 25	1 75-2 25	1 50-1 75	1 50-1 75	3 50-7 50	Union men receive \$1.75 per day.
Harness-makers.....	1 50-2 00	1 50-2 00	1 75-2 25	1 75-2 25	1 50-1 75	Scientific men get from \$2.50 to \$3.
Jewelers.....						Find very few of the latter; mostly factory work now.
Lithographers.....						Difficult to fix average; ranges from \$2.50 to \$5 per day.
						About the same as job printers, except designers, who get from \$30 to \$50 per week.
Lathers.....	1 50	1 50	1 50	1 75	1 75	
Locksmiths.....	1 50-2 00	1 50-2 00	1 50-2 00	1 50-2 00	1 50-2 00	
Machinists.....	1 25-1 60	1 25-1 60	1 25-1 60	1 25-1 60	1 25-1 60	
Marble-cutters.....	2 00	2 00	2 25-2 75	2 25-2 75	2 25-2 75	Occasionally good malaters reach \$2 per day.
Monitors.....	2 25-2 50	2 25-2 50	2 50-3 00	2 50-3 00	2 50-3 00	Average about \$2.50 per day; real artistic workmen get from \$4 to \$5 per day.
Millwrights.....	3 50-4 00	3 50-4 00	3 50-4 50	3 50-4 50	3 50-4 50	Some exceptional cases, \$8 to \$7 per day.
Musicians.....	2 00	2 00	2 25	3 00	3 00	Professional.
Nailers.....						Nail mill started in 1884.
Painters.....	1 50-1 75	1 50-1 75	1 75-2 00	1 75-2 00	1 75-2 00	Good painters, during busy season, command \$2.25 to \$2.50; sign and carriage painters, \$2.50 to \$3 per day; house painters' annual average, \$1.75.
Paper-hangers.....	1 50-2 50	1 50-2 50	1 50-2 50	1 50-2 50	1 50-2 50	Very fine work, \$3 per day.
Photographers.....						Photographers receive from \$10 to \$20 per week.
Picture-framers.....	1 50-2 00	1 50-2 00	1 50-2 00	1 50-2 00	1 50-2 00	There are few exclusive framers.
Plumbers.....	2 50-2 75	2 50-2 75	2 50-2 75	3 00-3 50	3 00-3 50	A few receive \$4 per day.
Plasterers.....	1 50-2 00	1 50-2 00	1 50-2 00	1 75-2 00	1 75-2 00	Minimum union scale, \$15 per week.
Pressmen.....						

SECOND BIENNIAL REPORT, 1885 AND 1886 (578 PAGES).

Besides the introduction this report includes consideration of factory laws, etc., distributive and industrial co-operation, co-operation in the United States, co-operation in Wisconsin, strikes and industrial disturbances, the eight-hour day, boycotting in Wisconsin, arbitration tribunals, foreign emigration, Wisconsin workingmen, miscellaneous matter, and manufacturers' returns. The treatment except of "manufacturers' returns" is almost wholly textual and the report is an interesting contribution to the economic and sociological literature of the state.

Introduction (52 pages).—This contains a textual consideration of various matters of interest to employes, suggested by the investigation which were undertaken.

Factory, hotel, labor, and lien laws (42 pages).—This chapter gives copies of the laws of the state relating to labor, factories, hotels, liens, building and loan associations, and a copy of the act creating the bureau of labor statistics, as enacted in 1885. The laws quoted regulate hours of labor; the hours of labor of women and children; require fire-escapes for factories, etc., and doors in factories, etc., to swing outward; relate to employment of apprentices; secure wages of laborers, etc., on Milwaukee public works; provide for exemption of wages from execution; secure wages in cases of assignment; prohibit intimidation of voters; provide for exemption from execution and attachment; for protection of children; relate to liability of stockholders for laborers' wages; secure wages of railroad laborers; relate to mechanics' liens; to laborers' liens upon lumber; to liens for board and lodging; to liens against ships, boats and vessels; and to building and loan associations.

Distributive and industrial co-operation (74 pages).—This is a historical and descriptive sketch of co-operation in various European countries and Australia, based on the report of Carroll D. Wright, chief of the Massachusetts bureau of labor statistics. Short tables throughout the text give the membership of the Rochdale Pioneers, the total amount of their funds, profits, and the amount of business done, each year, from 1884 to 1867; the profits of the productive departments of the English co-operative

wholesale society in 1883, and a list of productive societies in Great Britain, with date of organization, yearly sales, profits, etc., in 1884.

Co-operation in the United States (76 pages).—This gives a sketch of a large number of associations in various states of the Union conducted on a co-operative basis.

Co-operation in Wisconsin (45 pages).—This gives an account of the different co-operative enterprises of the state, including a table which gives, by industries, the number of firms and employees, classified according to whether the manufacturers answered yes or no to the inquiry relative to the desirability, practicability of co-operation.

Strikes and industrial disturbances (77 pages).—Under this heading is given a consideration of most of the labor troubles which occurred in the state, from January 1, 1885, to September 1, 1886. A table compiled from the returns of 2,000 employers gives a list of strikes, by industries, and localities, showing the number of employees involved and their gain and loss in wages, the cause of each strike, its duration and result. A copy of the scale of prices agreed upon by journeymen tailors and their employers, of Milwaukee, is also given.

The eight-hour day (58 pages).—This gives an account of the agitation in the state for an eight-hour labor day. It consists mainly of a detailed account of the Milwaukee riot, May, 1886, with a list of the killed and wounded, and of those convicted of offences in connection therewith, and extracts from laws relating to riots, etc.

Boycotting in Wisconsin (18 pages).—This gives an account of boycotting in the state during the past year, 1885-'86, together with the views of employers on the boycott.

Arbitration tribunals (26 pages).—This gives a sketch of arbitration in various European countries and in different states of the Union, including abstracts of laws relating to arbitration, opinions of employers and employees, and a tabular record of those employers of the state who expressed views for or against arbitration, showing the number of firms and nature of business done, and the number of employees, by industries.

Summing up the opinions of the employers it is found that of 425 reporting 184 or about 43 per cent. were in favor of ar-

bitration and that 241 or 57 per cent. were opposed to it. The average number of persons employed by the former was 53, of the latter 55. Of the workers who expressed their views by far the larger proportion favored arbitration as a means of settling differences between them and their employers. As the employer is invariably the stronger party in all such disputes these facts are significant.

Foreign immigration (15 pages).—This is a brief consideration of immigration into the United States, and of the necessity for its restriction. Extracts from views of employers are given, and tables showing the number of immigrants landed each year, from 1820 to 1886; the foreign born population engaged in agriculture and manufactures, from 1870 to 1880, and by firms, the kind of persons they would exclude, and the qualifications they would require of those admitted.

The views of the employers as to kind of immigrants that ought to be excluded and the qualification which should be required of them were brought out quite clearly by the question whether any "restriction" of immigration ought to be adopted.

Replies to this question were received from 526 or 69.6 per cent. of the total number of 756, and of these only 63 or 12 per cent. reported in the negative. About 88 per cent. of the number reporting, or 463 employers, therefore, were of the opinion that in one way or another immigration should be restricted. As to the nature of the restrictions desired opinions varied. It appears from the report, however, that 104 or 23 per cent. of those in the affirmative did not specify the nature of the restriction, that 216 or about 46.5 per cent. held that anarchists, socialists, criminals and paupers ought to be excluded, that 70 or over 15 per cent. were of the opinion that immigration ought to be entirely prohibited, that 34 or 7.4 per cent. thought property, and that 9 or nearly 2 per cent. thought educational qualification should be required, that 30 or nearly 6.5 per cent. held that a good moral character should be the terms upon which immigrants should be admitted.

This one question was thus the means of bringing out the fact that there was an overwhelming sentiment in favor of restricting immigration. A large proportion even went so far as to suggest that it ought to be cut off entirely, for at least a certain period.

It also developed that a large percentage of those who favored restriction of some sort were foreign born.

Wisconsin workingmen (15 pages).—This gives extracts from views of workingmen on different phases of the labor problem, and a table giving, for individuals, their occupation, residence, yearly earnings, hours of labor, the number of days employed during the year, the number in family, the number owning homes, their yearly expenses in detail, etc.

Miscellaneous matters (15 pages).—This gives an account of bonus agreements and cut-throat contracts, including specimens of some of them used by corporations in Milwaukee, and a consideration of convict labor in the state.

Manufacturers' returns (26 pages).—This comprises statistical tables, compiled from the sworn returns of employers, giving, by establishments and industries, the number of employes (men, women and children) and their wages and hours of labor for 1885 and 1886; a summary of wages, by industries, for 1885; and a summary showing industries in which female and child labor are employed, with their number and the proportion they bear to the whole number of employes in 1886.

As to persons employed the summaries show that their number for the establishments embraced were 34,974 males and 3,817 females, or a total of 38,797. The percentage of females was thus 9.81 of the total employed. The tables also show that 177 males and 44 females were under 14 years and that 7 were under 12 years of age.

To the 38,797 workers \$11,256,700 was paid in wages during the year (1885), or an average amount to each worker of about \$290. Comparing this amount with the average as obtained in the same manner from the figures in the foregoing report, a wide difference is noticed, the amount in the former report being about \$363, or \$73 per year more. While the returns for both years included practically the same establishments it is not likely that this difference represents a fall in wages. It is more likely that the total wages for the first year includes not only the amount paid as wages, but also the amount paid in salaries. For the above year the amount paid as salaries footed up to \$2,040,523. Adding this to that paid in wages, as shown above, the total is brought up to \$13,297,223, and the average, leaving the

wage-earners as reported, to \$354 or only \$9 less than the figures of two years earlier. As from other parts of the report it appears that the state was suffering somewhat from a business depression during 1885, this difference of \$17 is more likely to represent the course of wages though even this figure should be accepted with caution.

THIRD BIENNIAL REPORT, 1887 AND 1888 (398 PAGES).

This report treats of the following subjects: An introduction dealing with the work of the bureau, trade notes, etc., individual and trade statistics, and employers' statistics. The contents and some of the conclusions under each of these heads are given below:

Introduction (24 pages).—This is a textual consideration of the work of the bureau, and of various matters of interest to workingmen, including lists of industries arranged according to aggregates of wages paid and to number of employes, and a table giving the average wages by localities.

Trade notes, remarks and suggestions by Wisconsin wage-earners (115 pages).—This gives extracts from remarks made by workingmen concerning immigration, home ownership, labor organizations, improvement of trades, general legislation, trade notes, and contracts.

Individual and trade statistics; tabulated returns of Wisconsin wage-earners (96 pages).—This embraces five statistical tables, giving, for individuals, their occupation, location, earnings, hours of labor, nativity, age, conjugal condition, number owning homes, their wages and methods and frequency of payment; their earnings, time employed, and increase or decrease of wages in ten years; their products per day of hand and machine labor; their ages at the beginning of work, the length of their apprenticeship, etc.; and the peculiarities of their occupation, the bodily ailments peculiar to their trade, the cost of tools, etc.

Summarized, the above tables show among other things:

That of 653 skilled workmen reporting 271 had steady work, and that the remainder, 382, found work at heir trade 231½ days out of the year; that the total number of days employed was 162,289 or 248½ days on the average to each man.

That the total earnings in 1887 of 597 skilled hands was \$341,860 or \$572.63 on the average.

That the average age of 718 skilled workmen, exclusive of apprentices, was 37 years and one month.

That 712 persons, exclusive of saw mill employes, worked on the average 10 hours and 7 minutes daily, while 74 saw mill employes worked 10 hours and 50 minutes daily. This makes the general average for these workers 10 hours and 20 minutes daily.

That of 743 workmen 661 reported full cash, 82 part cash and part merchandise payment of wages; that of 528 workmen 295 reported weekly, 184 monthly, and 49 semi-monthly payment of wages.

That of 826 workmen reporting on this point 389 owned their homes.

That of 826 workmen 450 were born in the United States, of these 213 in Wisconsin. The remaining 237 came to this state from all other sections of the country except the south, not a single one reported from this section; 376 were foreign born.

Employers' statistics (26 pages).—This comprises statistical tables, giving by industries the number of employes and their average daily wages, annual earnings, time lost and time employed, by occupations; the number of establishments, by industries; the number of their employes (male and female), and the total amount paid in wages; the number of employes and aggregate wages paid in 1887 in 44 wholesale establishments in Milwaukee, by industries; and the aggregate wages, by localities; the number of establishments and of employes in 1887 with the population of the places according to the state census of 1885. These facts are presented in tables VI, VII, VIII, IX and X.

Table VI shows the average daily wages and average annual earnings in all branches of labor connected with 845 establishments employing 62,935 wage-earners. The average annual earnings in 211 branches of occupation was \$643.11, exclusive of foremen.

Table VIII shows, among other things, that out of the 62,935 employes 7,707 were females, and that of the 845 establishments 456 had weekly, 261 monthly, and 86 semi-monthly, while 32 had no regular pay days. This table also shows that these es-

establishments utilized 75,995 horse-power for motive power, and paid out in wages during the year \$23,710,865.52, or an average of \$376.75 to each wage-earner employed.

Table IX shows that the 44 wholesale establishments which reported were classified into 17 industries and employed 1,149 persons, paying in wages an aggregate of \$658,759.54 during the year.

Table X shows the aggregate wages paid by localities.

FOURTH BIENNIAL REPORT, 1888-89 (331 PAGES).

Introductory (3 pages).—Under this head is embraced brief textual statements concerning the work of the bureau, its relation to the workers and the press, the labor laws enacted during the period covered, and the industrial condition generally of the state.

Statistics of building trades (120 pages).—This part gives the result of an investigation concerning the condition of wage-earners in the building trades, based upon the answers of 248 contractors, the written statement of 538 workingmen, the inquiries and direct reports of the secretaries of master builders' associations, the personal investigations by officers of the bureau, and the copies of pay rolls of 142 firms. The text gives selected replies of workingmen concerning the condition of trade, the home ownership, and their present condition as compared with that in the old country. The tables based on returns from individual workingmen give for each, by occupation, his location, total earnings, daily income, and number of days lost during the year. Other tables give number of rainy days and the number of days the wind attained a velocity of 25 miles an hour at Milwaukee each month, from 1887 to 1889; the ages at which 274 natives and 251 foreign born workingmen entered their trades; the number of workingmen, native and foreign born, over 25 years of age, by ages, owning homes; the number of workingmen classified by annual earnings, showing the number and proportions owning homes; and a statement by foreign born workingmen, showing the monthly wages received in Europe, as compared with Wisconsin, for 26 days' work; their possible earnings in their native countries with steady employment as compared

with their actual earnings at their trade in Wisconsin from May 1st, 1888, to May 1st, 1889, and their possible annual earnings in Wisconsin, working 310 days. Tables based upon returns from employers give, by location and occupation, the number of workmen classified according to their hourly earnings; the average earnings per hour and per year of 225 ten-hour work days and the average daily income for 365 days; the number and proportion of apprentices to journeymen as reported by contractors in each trade; copies of pay rolls of 138 contractors, showing the amount paid in wages each month during the year 1889 by each, with recapitulation showing by months the total amount paid in wages and the number and per cent. of men working and idle. Tables for each of a number of industries show, by localities, the average wages of workmen, with a recapitulation showing the number of workmen reported, classified according to occupations and hourly earnings. Tables compiled from returns made by officers of builders' exchanges show, by occupations, the average wages of workmen in 39 cities located in all parts of the United States compared with those paid in Milwaukee.

The tables are interesting and instructive. For lack of space, however, only two brief summaries of those which are concerned with the rate of wages can be included here. The first of these show the number of persons reported employed at classified wages in the building trades in Wisconsin. The second in order gives the average rate of wages per hour in the building trades in Milwaukee and in 39 cities in the United States.

Classified hourly wages in the various building trades in Wisconsin—Report, 1888-9.

Trades.	30 cents per hour and over	45 cents, but under 50.	40 cents, but under 45.	35 cents, but under 40.	30 cents, but under 35.	25 cents, but under 30.	20 cents, but under 25.	15 cents, but under 20.	12 ½ cents, but under 15.	10 cents, but under 12 ½.	Under 10 cts. per hour.	Totals.	Percentages.
Bricklayers	2	19	11	63	32	9	.....	.....	.....	.....	.....	136	4.99
Stone masons .....	.....	.....	23	26	45	12	7	.....	.....	.....	.....	116	4.25
Plasterers .....	.....	.....	4	24	15	4	.....	.....	.....	.....	.....	47	1.72
Stone cutters	1	3	3	11	4	1	.....	.....	.....	.....	.....	23	.88
Mortar mixers .....	.....	.....	.....	.....	.....	2	12	2	.....	.....	.....	16	.58
Hod carriers .....	.....	.....	.....	.....	.....	29	102	15	4	.....	.....	150	5.50
Carpenters .....	.....	.....	.....	8	102	741	315	19	.....	.....	.....	1,215	44.60
House painters	1	.....	.....	2	37	253	127	8	7	.....	.....	435	15.96
Grainers	2	2	1	3	3	.....	.....	.....	.....	.....	.....	11	.41
Paperhangers .....	.....	.....	.....	1	7	13	1	.....	.....	.....	.....	22	.82
Decorators .....	.....	.....	.....	1	4	.....	.....	.....	.....	.....	.....	9	.34
Calclminers .....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	3	.12
Sign painters .....	.....	.....	.....	1	3	.....	.....	.....	.....	.....	.....	4	.15
Plumbers	1	1	6	16	15	18	5	5	3	.....	.....	82	3.02
Plumbers' helpers .....	.....	.....	.....	.....	.....	.....	5	2	4	60	.....	71	2.60
Steamfitters .....	.....	.....	.....	2	1	4	3	.....	1	.....	.....	11	.40
Gasfitters .....	.....	.....	.....	4	5	6	2	.....	2	.....	.....	19	.69
Sewer layers .....	.....	.....	.....	.....	.....	2	7	.....	.....	.....	.....	9	.33
Sewer diggers .....	.....	.....	.....	.....	.....	1	81	1	.....	.....	.....	83	3.05
Tinsmiths .....	.....	.....	1	.....	2	18	20	3	.....	.....	.....	44	1.61
Galvanized iron workers .....	.....	.....	.....	.....	1	2	6	1	.....	.....	.....	10	.36
Slaters .....	.....	.....	.....	.....	2	5	1	2	.....	.....	.....	10	.36
House movers .....	.....	.....	.....	.....	1	1	16	.....	.....	.....	.....	18	.66
Laborers .....	.....	.....	.....	.....	.....	2	127	32	19	.....	.....	180	6.60
Aggregates	3	4	25	49	162	282	1,139	879	90	40	60	2,724	.....
Percentages .....	.11	.15	.92	1.71	5.96	10.36	41.49	32.27	3.80	1.46	2.20	100.00	100.00

The above table embraces 23 trades besides those employed at common labor in the same, or an aggregate of 2,724 persons. Outside of a few trades, however, such as masons, carpenters, painters, etc., the number of persons embraced is rather limited, and the figures should therefore be used with considerable care. From a casual examination of the table it seems that masons and plumbers received the highest rate. Considering all industries, the proportion who receive from \$1.50 to \$2.50 per day constitute about two-thirds of the total number reported.

Average rate of wages per hour in the building trades in various cities, report, 1888-9.

Classification of Cities.	Rate per hour, cents
Milwaukee, Wis.	25.9
Atlanta, Ga.	21.5
Baltimore, Md.	30.
Bismarck, N. D.	28.
Boston, Mass.	30.1
Brooklyn, N. Y.	35.2
Buffalo, N. Y.	26.1
Chicago, Ill.	33.1
Cincinnati, Ohio	26.7
Cleveland, Ohio	26.7
Concord, N. H.	23.8
Detroit, Mich.	26.7
East Saginaw, Mich.	26.9
Galveston, Texas	32.
Grand Rapids, Mich.	23.1
Indianapolis, Ind.	28.6
Kansas City, Mo.	31.6
Lancaster, N. H.	22.2
Lexington, Va.	22.
Minneapolis, Minn.	26.1
Montpellier, Vermont	23.9
Nashville, Tenn.	22.7
New Orleans, La.	23.3
New York, N. Y.	37.
Norfolk, Va.	25.9
Philadelphia, Pa.	23.9
Providence, R. I.	27.7
Rochester, N. Y.	25.9
St. Joseph, Mo.	27.7
St. Louis, Mo.	33.4
St. Paul, Minn.	26.1
San Francisco, Cal.	41.2
Sacramento, Cal.	41.2
Santa Fe, N. Mexico	32.4
Sioux City, Iowa	27.6
Syracuse, N. Y.	24.0
Vicksburg, Miss.	24.8
Washington, D. C.	32.3
Wilmington, Del.	23.5

In the preceding table is found the average rate of wages per hour in the building trades in Milwaukee and 38 other cities in the country. The rate in Milwaukee was 25.9 cents per hour which, considering the whole table, would seem to constitute a fair average for all. A number of cities show, of course, a higher rate than this, but there are also a number, and among them several large cities, which show a lower rate. As these figures were obtained from officers of builders' associations they are likely to be fairly representative.

Statistics of manufactures (54 pages).—This chapter gives statistical tables showing, by industries, the number and per cent. of workmen reported, classified according to their daily wages, with recapitulation by industries, accompanied by a diagram showing for all industries the per cent. of workmen classified

according to their daily wages. Other tables give, by industries, the number of establishments, the total amount of wages paid in 1888 and 1889, the wages paid by new firms and the increase in the amount paid in wages in 1889 over 1888; the annual earnings per employe in each industry, computed by dividing the total amount paid in wages by the total number of employes; the relative importance of 62 leading industries according to the total and percentage amount paid in wages; and the record of the loss by fire in 1888 and 1889.

A table compiled from direct correspondence of the bureau with foreign authorities shows the average daily earnings, the hours of labor, and the purchasing power of a day's labor of a blacksmith in wheat bread, meat, pork and butter. A table compiled for and presented at the seventh annual convention of chiefs of bureaus of labor, 1889, shows the relative purchasing power of the daily wages of a blacksmith in the same commodities in Wisconsin and in foreign countries.

The statistical presentations in this part which relates to classified daily wages in manufacturing industries have been used under "Course of Wages" in latter part of this chapter. The total number of persons reported for each class of wages are also given in below table.

Classified daily wages in the manufacturing industries in Wisconsin, report 1888-9.

Classification of Wages.	Persons employed.	Percent-ages.
\$4.00 per day and over	1,707	2.09
3.50 but under \$4.00 .....	.968	1.19
3.00 but under 3.50	1,387	2.43
2.50 but under 3.00	4,300	5.27
2.00 but under 2.50	9,242	11.32
1.50 but under 2.00	22,570	27.65
1.25 but under 1.50	18,640	22.83
1.00 but under 1.25	8,478	10.38
.75 but under 1.00	5,406	6.62
.50 but under .75	5,482	6.84
Under 50 cents	2,752	3.37
Aggregates	81,332	100.00

The table gives the number of persons and percentage of same for each class. Of the 81,332 persons included 40,774 or practically 50 per cent. received \$1.50 per day or over. Nearly 23 per cent. of the total received \$1.25 but under \$1.50 per day.

FIFTH BIENNIAL REPORT, 1891-1892 (298 PAGES).

Introduction (3 pages).—Under this head is included a brief textual survey of the work of the bureau, the business situation in the state generally, and the laws relating to the duties of the bureau which were enacted during the last session of the legislature.

Building trades (63 pages). This chapter is practically a continuation of the investigation of the conditions in the building trades in this state. The results are based upon returns of employees, employers or contractors, members of master builders' associations, and personal inquiries by the officers of the bureau.

The returns of the employees relates mostly to conditions in their trade in the locality where they live.

The returns of the contractors called for the amount paid in wages to each workman and the time worked during the year; the total amount of wages paid each month and for the year, the rate of wages per hour, and for many other facts relating to the condition of employment. The returns from members of master builders' associations and other persons show the rate of wages in the cities where received from.

Of the information thus obtained, those parts which relate to the rate of wages and the total amount paid as wages the preceding year, is presented in tabulated form; those concerning the condition of the workers and of employment in other respects appear under remarks and trade notes. From the tables in the report, the following presentation of results has been prepared:

Classified hourly wages in the various building trades in Wisconsin, 1891-92.

Trades.	50 cents per hour and over	45 cents, but under 50.	40 cents, but under 45.	35 cents, but under 40.	30 cents, but under 35.	25 cents, but under 30.	20 cents, but under 25.	15 cents, but under 20.	12.5 cents, but under 15.	10 cents, but under 12.5.	Under 10 cts. per hour	Total.	Percentages.
Brick layers.....	2	26	68	22	38	21	5	.....	.....	.....	.....	182	6.51
Stone masons.....	6	4	16	53	41	11	.....	.....	.....	.....	131	4.60
Plasterers.....	7	28	22	23	17	12	1	.....	.....	.....	110	3.94
Stone cutters.....	17	.....	.....	2	15	13	1	.....	.....	.....	.....	48	1.72
Hod carriers.....	27	63	113	12	.....	.....	.....	215	7.69
Mortar mixers.....	5	20	2	.....	.....	.....	27	.97
Carpenters.....	47	423	280	120	14	.....	.....	864	30.92
House painters.....	67	63	30	7	.....	.....	.....	167	5.97
Paper hangers.....	13	29	16	2	.....	.....	.....	60	2.15
Grainers.....	1	7	5	.....	.....	.....	.....	.....	13	.47
Sign painters.....	4	4	.....	.....	.....	.....	.....	8	.29
Decorators.....	4	.....	4	.....	2	3	.....	.....	.....	.....	.....	15	.54
Calclminers.....	6	.....	.....	.....	.....	.....	9	.32
Plumbers.....	5	8	13	8	.....	.....	.....	.....	.....	38	1.36
Plumbers' helpers.....	14	1	.....	.....	.....	44	1.58
Steam and gas fitters.....	4	28	9	4	.....	.....	.....	45	1.61
Lathers.....	27	7	6	.....	.....	.....	.....	35	1.25
Sewer layers.....	2	7	21	3	.....	.....	.....	40	1.43
Sewer diggers.....	66	12	.....	.....	78	2.79
Fresco painters.....	1	1	16	.....	1	2	.....	.....	.....	.....	21	.75
Tinsmiths.....	1	15	32	21	3	.....	.....	72	2.58
House movers.....	1	.....	1	7	22	.....	.....	.....	31	1.11
Laborers.....	2	152	110	6	.....	270	9.66
Marble workers.....	1	3	.....	9	21	33	52	14	.....	.....	133	4.76
Com'n roofers— pavers.....	3	4	11	110	.....	.....	.....	128	4.58
Slaters and tin layers.....	5	.....	5	.....	.....	.....	.....	10	.36
Total.....	23	41	109	92	313	764	539	710	173	11	19	2,794	100.00
Percentages.....	.83	1.47	3.90	3.29	11.30	27.35	19.29	25.41	6.19	.39	.68	100.00	

Average rate of wages per hour in the building trades in various cities, report of 1891-2.

Classification of Cities.	Rate per hour, cents
Milwaukee	27.9
Bismarck	30.5
Buffalo	27.8
Chattanooga	24.7
Chicago	35.1
Denver	38.1
Detroit	28.2
Indianapolis	29.8
Kansas City	27.7
Louisville	23.6
Lynn	29.6
Minneapolis	30.7
Mobile	26.0
New Orleans	30.0
Norfolk	28.9
Omaha	33.7
Peoria	33.1
Philadelphia	33.2
Pittsburg	35.7
Portland, Me.	26.6
Portland, Ore.	37.0
Providence	26.9
Pueblo	37.7
Saginaw	22.0
St. Joseph	26.6
St. Louis	30.1
St. Paul	29.4
Sioux City	29.5
Superior	28.1
Syracuse	26.2
Vicksburg	29.0
Wilmington	27.9
Worcester	26.1

Statistics of manufactures (60 pages).—This part is also a continuation of an investigation which was begun in the last report. The returns give, by industries, the classified daily wages of about 90 per cent. of the factory workers in the state, the total amount paid in wages, and the losses by fire for the year. The tables show, by industries, the number receiving "classified wages," the amount paid in wages, yearly, from 1888 to 1891 inclusive, the average wages in 1889, 1890 and 1891, a comparison of the persons employed and wages paid in Milwaukee with the rest of the state, the losses by fire from 1885 to 1892 inclusive. The table showing the classified wages of the total number of workers included is reproduced below:

*Classified daily wages in manufacturing industries in Wisconsin,
report, 1891-2.*

Classification of Wages.	Persons employed.	Percent- ages.
\$4.00 per day and over	2,271	2.22
3.50 but under \$4.00	1,278	1.24
3.00 but under 3.50	5,489	5.38
2.50 but under 3.00	7,344	7.20
2.00 but under 2.50	11,490	11.27
1.50 but under 2.00	29,212	28.68
1.25 but under 1.50	19,249	18.88
1.00 but under 1.25	10,447	10.24
.75 but under 1.00	6,111	5.99
.50 but under .75	6,100	5.90
Under 50 cents	2,931	2.87
Aggregates	101,922	100.00

Of the 101,922 persons reported for this report 57,084, or practically 56 per cent. received \$1.50 per day and over. As these tables cover about 90 per cent. of the factory workers in the state and thus represent the actual condition of all, a comparison of the above facts with the same facts in the table for 1888-9 shows that the number of those who received \$1.50 per day and over was about 6 per cent. greater in the period covered by this report than in that covered by the former.

SIXTH BIENNIAL REPORT, 1893-4 (345 PAGES).

As has been explained already the fourth and fifth biennial reports embraced for their respective periods investigations of the wages paid and conditions generally in the building trades and manufacturing industries in this state. In the sixth report these investigations were continued. The schedules used were almost identical. The parties applied to for information were either the same or represented the same interests and the presentation of the data and of the results is practically alike throughout the three reports. Detailed explanations of the nature, sources, and tabulation of the data are therefore unnecessary here.

Of the two tables given below, which have been compiled from this part of the report, the first in order gives the number in the different branches of the building trades reported employed at a classified rate of wages per hour, and the second table shows

the average rate of wages per hour in the building trades in Milwaukee and in 28 other cities in this country.

Classified hourly wages in the various building trades in Wisconsin—Report, 1893-4.

Trades.	50 cents per hour and over	45 cents but under 50.	40 cents but under 45.	35 cents but under 40.	30 cents but under 35.	25 cents but under 30.	20 cents but under 25.	15 cents but under 20.	12 1/2 cents but under 15.	10 cents but under 12 1/2.	Under 10 cents per hour.	Totals.	Percentages.
Bricklayers.....	...	...	17	25	25	11	3	...	...	...	...	81	3.03
Stone masons.....	...	...	12	22	39	26	13	...	...	...	...	112	4.19
Plasterers.....	...	...	10	22	25	28	12	...	...	...	...	97	3.63
Stone cutters.....	15	...	31	18	44	20	9	...	...	...	...	142	5.32
Hod carriers.....	...	...	...	...	...	...	5	158	...	...	...	177	6.63
Mortar mixers.....	...	...	...	...	...	...	5	202	27	...	...	234	8.77
Carpenters.....	...	...	...	11	18	87	173	100	15	13	...	417	15.64
House painters.....	...	...	...	...	19	46	63	67	10	7	...	212	7.94
Graingers.....	...	...	...	...	15	32	2	55	...	...	...	123	4.62
Sign painters.....	5	...	...	...	13	31	9	25	...	...	...	83	3.11
Decorators.....	3	...	7	13	4	8	...	...	...	...	...	35	1.31
Fresco painters.....	...	...	4	9	7	2	...	...	...	...	...	23	.86
Plumbers.....	1	...	5	10	43	26	28	10	11	...	...	133	4.99
Plumbers' helpers.....	...	...	...	...	...	...	...	14	23	14	35	86	3.23
Steam and gas fitters.....	...	...	7	10	...	31	45	14	11	2	85	205	7.69
Tinsmiths.....	...	...	...	...	22	22	12	9	...	2	...	67	2.51
Laborers.....	...	...	...	...	...	...	7	326	107	...	...	440	16.53
Aggregates.....	24	5	98	173	285	386	356	983	193	121	35	2,667	100.00
Percentages.....	.89	.18	3.68	6.52	10.78	14.46	13.33	36.88	7.43	4.53	1.32	100.00	.....

Average rate of wages per hour in the building trades in different cities, report, 1893-4.

Classification of Cities.	Rate per hour cents
Milwaukee, Wis.	29.6
Atlanta, Ga.	21.3
Buffalo, N. Y.	28.6
Butte, Mont.	47.6
Charleston, S. C.	21.0
Cleveland, Ohio	30.1
Denver, Col.	29.9
Grand Rapids, Mich.	22.8
Jacksonville, Florida	24.0
Kansas City, Mo.	28.6
Louisville, Ky.	22.2
Lowell, Mass.	27.4
Lynn, Mass.	30.0
Minneapolis, Minn.	27.2
Newark, N. J.	33.2
New Haven, Conn.	28.6
New Orleans, La.	26.7
Norfolk, Va.	25.4
Omaha, Neb.	34.4
Philadelphia, Penn.	32.5
St. Joseph, Mo.	29.1
St. Louis, Mo.	33.0
Pueblo, Col.	38.7
Saginaw, Mich.	24.3
St. Paul, Minn.	30.4
Sioux City, So. Da.	28.3
Tacoma, Wash.	38.9
Washington, D. C.	38.6
Wilmington, Del.	28.1

The two preceding tables, together with the presentations for the reports of 1888-9 and 1891-2, make a comparison of the course of wages in the trades included during the years covered easily possible. Such comparisons are of special value, from a practical point of view. Without statistical presentation along this line there would be no way of telling, with any degree of certainty, whether the general trend of wages during any period was up or down, or the extent of such rise or fall. It is true that some of the trades are not very heavily represented and that, for this reason, conclusions cannot be safely drawn in all cases. Considering everything, however, there are good reasons for believing that in most cases the figures as given deviate but little from the actual condition and, at least as far as the course of wages in a general way is concerned, may be used with safety.

What the above series of tables show for building trades in this state the table below, together with those for the other two reports, shows for the factory workers. As to the meaning of these tables there can be no possible doubts, as each represents for the year covered fully 90 per cent. of the factory workers, in the industries included, in the state.

Classified daily wages in manufacturing industries in Wisconsin, report, 1893-4.

Classification of Wages.	Persons employed.	Percent-ages.
\$4.00 per day and over	2,260	2.19
3.50 but under \$4.00	1,513	2.19
3.00 but under 3.50	2,461	2.39
2.50 but under 3.00	6,170	5.99
2.00 but under 2.50	13,032	12.96
1.50 but under 2.00	28,756	27.32
1.25 but under 1.50	21,225	20.67
1.00 but under 1.25	11,006	10.69
.75 but under 1.00	6,962	6.76
.50 but under .75	7,028	6.82
Under 50 cents	2,452	2.39
Aggregates	102,865	100.00

Dividing the number in this table in the same way as in the former tables we find that there was a decrease in the persons receiving \$1.50 per day and over of about 3 per cent., the number in this case being about 53 per cent. of the total as against nearly 56 per cent in the former period, or for 1891-2.

THE SEVENTH BIENNIAL REPORT, 1895-96 (548 PAGES).

This report includes six investigations under the following heads: "Farmers' Returns," "Mechanics and Workingmen's Returns," "Average wages and time in operation in manufacturing industries," "Classified daily wages in manufacturing industries," "Manufacturers' Returns," and "Building and Loan Associations."

Farmers' returns (pages 1-176).—Under this head is presented mostly in tabulated form responses from about 550 farmers in the state to more than forty questions bearing upon their economic and social conditions. While only about 10 per cent. of the schedules sent out were returned, those received make interesting reading, having evidently been carefully prepared. A few of the answers are summarized below:

Native born	354
Foreign born	176
Not reporting place of birth.....	19
Married	517
Single	32
Average number of persons in 500 families	5.6
Average months per year of school attendance of children.....	7.5
Average number of years engaged in farming	25.6
Average number of acres per farm (546 farms).....	209.3
Average number of acres per farm under cultivation (544 farms).....	134.5
Average value of land and imp. per acre (532 farms).....	\$47.93
Number of farm hands employed in summer (409 farms)	678
Average monthly wages in summer.....a	\$17.20
Number of farm hands employed in winter (270 farms)	346
Average monthly wages in winter	\$12.30
Members of farmers' associations	19
Not members of farmers' associations	514
Not rep. as to membership of farmers' associations	16
Members of beneficiary associations.....	111
Not members of beneficiary associations	412
Not rep. as to membership of beneficiary association.....	26
Carry life insurance	163
Do not carry life insurance.....	364
Not reporting as to life insurance.....	22

a. In over 90 per cent. of cases this includes board and washing.

Besides these the farmers expressed themselves on many other points. Thus 98 per cent. of those reporting devoted themselves to mixed farming, finding this the most profitable. Nearly all expressed themselves upon the yield and the estimated cost per unit of products less interest on the value of the land. As regards terms of employment for hired help over 86 per cent. stated that the hiring was done either by the month or for the season. Nearly 87 per cent. said that domestic help

was scarce and gave as a reason for this that girls who had to work for a living preferred other employment, mostly in the cities. The larger proportion also stated that of the farm laborers also the tendency was towards the city.

A chapter in this part is devoted to production and prices of farm products in the United States. The material for this is mostly obtained from the annual reports of the Secretary of Agriculture. From this the following comparison of the relative increase in population and products from 1870 to 1895. The figures used are the average of the two five-year periods, 1870-74 and 1890-95.

Relative increase of population and products.

Classification.	Percentage of Increase.
Population	62.74
Wheat—in bushels	81.71
Corn—in bushels	70.69
Oats—in bushels	162.08
Hay—in bushels	187.08
Cattle—number of heads	125.64
Hogs—number of heads	56.60

From this is seen that the production of the various crops in this country as a whole increased much faster than population. Thus while population increased 62.74 per cent. the production of wheat increased 81.71 per cent. and of oats 162.08 per cent. Cattle increased in number 125.64 per cent. and hogs 56.60 per cent.

Mechanics', etc., returns (pages 177-336).—This part is based upon 1,488 returns made by mechanics and workmen throughout the state on schedules sent them for that purpose. The returns related among other things to the age of the person reporting, number in family, hours of labor, wages, pay day, time employed, yearly earnings, income from other sources, living expenses in detail and other facts relating to their economic condition, together with their views upon various topics. A summary of the main tables is presented as follows:

Statistics of mechanics and workmen, 1895.

OCCUPATIONS.	Average age.	Av. persons supported	Av. hours of labor.		Av. months employed during year.	Av. daily wages.	Persons reporting part of wages withheld.	Persons owning homes.	Av. value of homes.	Persons reporting homes mortgaged.	Persons carrying life insurance.
			Summer.	Winter.							
Blacksmiths.....	35.9	4.5	10.0	8.9	10.4	\$1.85	51.4	54.2	\$1,879	65.4	45.8
Boilermakers.....	33.4	3.5	10.0	9.1	11.1	2.66	85.7	71.4	2,250	a.	71.4
Bookbinders.....	35.3	3.6	10.0	10.0	11.1	2.54	50.0	4,833	65.7	40.0	
Brewery workers.....	35.5	4.5	10.0	9.4	10.2	2.16	18.7	35.2	2,420	83.3	48.4
Cabinet makers.....	33.6	4.1	10.0	8.1	9.8	1.58	74.0	43.6	1,458	76.5	27.6
Carpenters.....	37.9	4.2	10.0	8.9	10.0	1.76	46.6	88.9	1,611	58.9	49.5
Cigar makers.....	33.5	3.8	7.8	7.9	8.3	1.55	...	21.6	2,212	62.6	51.3
Coopers.....	37.2	3.9	9.6	9.0	8.6	1.49	7.3	22.5	2,488	66.6	20.0
Engineers.....	35.9	3.7	11.2	9.7	10.9	2.05	45.2	42.8	2,133	55.5	61.8
Factory operatives.....	32.4	4.6	10.0	8.9	9.2	1.14	60.6	33.7	1,420	80.0	19.1
Firemen.....	32.3	4.6	11.9	9.6	10.5	1.58	100.0	25.0	1,566	100.0	25.0
Machine hands.....	33.5	4.2	10.1	9.0	9.8	1.50	62.5	44.2	1,539	81.4	36.0
Machine woodworkers.....	32.7	3.9	10.0	8.3	9.7	1.39	67.1	30.7	1,396	66.6	26.9
Machinists.....	36.2	3.6	9.9	9.1	10.8	2.39	64.8	45.9	2,311	50.0	56.1
Masons and bricklayers.....	34.7	4.9	9.1	8.3	6.3	2.71	92.3	52.9	2,065	33.3	47.0
Mattress makers.....	31.3	3.2	9.1	5.2	10.5	1.35	...	16.6	2,750	33.3	a.
Millwrights.....	42.0	4.1	10.1	8.6	10.9	2.28	33.3	83.3	1,945	60.0	66.6
Molders, brass and iron.....	32.0	5.0	10.0	9.0	9.0	2.16	55.3	33.3	1,294	58.8	45.4
Painters.....	36.0	4.0	10.0	9.0	10.0	1.74	80.0	35.1	1,369	63.1	39.3
Paper hangers.....	31.9	3.6	11.0	11.0	10.6	2.08	44.4	25.0	1,233	33.3	50.0
Plumbers and steam fitters.....	26.8	3.5	10.0	9.0	9.5	2.07	20.0	42.8	1,366	33.3	42.8
Printers.....	35.4	2.9	9.1	9.1	11.0	2.66	...	43.7	1,878	14.2	35.2
Shoemakers.....	32.5	3.4	10.0	8.4	8.9	1.65	27.2	30.5	2,527	27.7	39.5
Tailors.....	33.7	3.0	10.0	9.5	8.8	1.86	12.5	62.5	1,715	60.0	27.2
Tanners and curriers.....	35.4	4.8	10.0	8.9	10.4	1.62	34.0	39.1	1,514	83.3	41.0
Teamsters.....	33.1	4.8	10.0	9.5	11.2	1.63	30.0	36.4	950	50.0	30.7
Tinsmiths.....	28.5	2.4	10.0	10.0	10.6	2.06	66.6	20.0	800	100.0	83.3
Tobaccoists.....	29.7	4.5	8.0	8.0	10.2	1.87	...	25.0	1,500	100.0	50.0
Unskilled labor.....	36.9	4.8	10.7	8.1	8.9	1.21	58.1	39.4	920	68.6	16.0
Upholsterers.....	36.0	4.6	10.0	8.2	11.5	2.06	...	16.6	1,600	100.0	100.0
Wagon makers.....	41.2	4.7	10.0	8.2	9.2	1.88	25.0	58.3	1,371	28.5	41.0
Miscellaneous.....	32.7	4.1	10.0	9.0	10.7	2.87	33.5	50.7	2,530	59.4	63.5

The above tables give, for the number reporting in each trade, the average age, persons to support, hours of labor, time employed during year, wages received, the percentage reporting part wages withheld, owning homes and average value and indebtedness of same, and the percentage carrying life insurance.

The highest average age, 42 years, is that of millwrights and the lowest, or 26.8 years, is given for plumbers. In most of the trades 10 hours constituted a day's work in summer, but there are some exceptions. Engineers, firemen and paper hangers worked more than 10 hours a day, while cigar makers, coopers, machinists, masons, mattress makers, printers and tobacco workers worked less than 10 hours per day. The fluctuations of the figures between the different trades is equally marked. As a whole the table is interesting and deserves more study than can be given to it here.

Number reporting, and in family, yearly earnings from all sources, living expenses in detail and total by occupation in 1895.

OCCUPATIONS.	Families reporting.	Av. persons to a family.	Av. yearly income per family.	AVERAGE YEARLY EXPENDITURES PER FAMILY.						
				Subsistence	Clothing.	Fuel.	Rent.	Sundries.	Total.	
Blacksmiths	17	4.5	\$176 82	\$223 41	\$72 82	\$29 40	\$85 81	\$31 31	\$192 75	
Boilermakers	4	3.5	577 75	269 03	59 25	29 50	102 00	81 50	511 25	
Brewery workers	16	4.4	629 56	266 12	79 81	36 25	100 86	131 50	614 64	
Cabinetmakers	12	3.6	505 57	216 16	70 67	32 75	77 75	111 67	509 00	
Carpenters	36	4.3	435 00	182 75	59 61	28 06	75 39	82 31	475 12	
Cigarmakers	14	4.0	451 06	238 14	64 92	30 50	88 74	82 28	504 58	
Coopers	15	4.7	418 88	235 40	62 33	28 86	81 00	87 06	494 63	
Engineers, stationary	16	3.7	755 05	285 00	96 69	37 56	106 37	132 81	688 43	
Factory operatives	29	3.7	290 03	155 22	37 25	21 67	50 99	41 94	307 07	
Firemen, stationary	6	5.2	463 49	202 00	67 50	40 50	73 00	74 83	467 83	
Machine hands	14	3.4	456 79	182 79	68 57	25 05	80 28	50 41	407 10	
Machine woodworkers	25	4.3	390 07	190 90	59 33	23 74	72 56	48 24	394 67	
Machinists	33	4.2	739 85	287 19	99 03	39 34	123 83	129 01	665 40	
Masons and bricklayers	3	5.7	548 84	318 34	89 00	37 66	76 00	69 00	532 00	
Mattressmakers	2	3.0	336 00	200 00	45 00	22 00	48 00	21 00	336 00	
Millwrights	2	6.0	695 00	240 00	107 50	37 50	102 00	73 00	560 00	
Molders	25	4.8	570 09	253 44	78 13	30 59	84 78	70 68	517 60	
Painters	25	4.0	430 01	208 44	70 22	28 08	71 52	50 84	429 20	
Papermakers	5	4.0	765 00	348 00	72 00	54 00	108 00	69 00	651 00	
Plumbers and steamfitters	2	3.5	505 09	247 00	117 50	27 50	120 00	72 00	584 00	
Printers	6	3.6	721 66	275 00	86 66	40 00	108 00	142 16	651 82	
Shoemakers	31	3.2	449 18	210 95	47 62	30 67	83 33	67 76	446 83	
Tailors	8	3.0	616 00	166 66	48 00	45 66	84 00	52 34	396 66	
Tanners and curriers	24	4.2	501 00	234 22	80 75	35 55	80 70	65 50	496 72	
Teamsters	6	4.8	627 00	251 66	65 50	23 87	90 33	136 80	568 16	
Tinsmiths	4	3.5	607 75	236 50	52 25	29 50	93 00	113 00	551 25	
Tabacconists	2	3.5	585 00	241 00	45 00	30 00	117 00	132 00	565 00	
Unskilled laborers	44	4.9	352 32	176 59	43 11	27 02	64 03	46 66	363 40	
Upholsterers	4	4.5	703 50	275 50	101 20	32 00	110 00	155 80	674 50	
Wagonmakers	5	4.4	505 20	199 00	68 00	45 00	98 40	86 80	497 20	
All occupations	423	4.2	\$535 66	\$233 93	\$71 27	\$32 67	\$38 57	\$35 00	\$511 44	

The above table shows for each occupation included the number of persons reporting, the number of persons in each family, the yearly earnings per family, and in detail the average cost of living per family.

In all 423 persons reported. For all occupations the average persons to each family was 4.2 and the average yearly earnings \$535.66. The average yearly cost of living per family was \$511.44. Of this \$233.93 or 46.17 per cent. was paid for food or subsistence, \$71.27 or 13.88 per cent. for clothing, \$32.67 or 6.48 per cent. for fuel, \$88.57 or 17.37 per cent. for rent, \$85.00 or 16.10 per cent. for incidental expenses. The proportion of these outlays vary considerably as between the different occupations caused largely, it appears, by the amount of the earnings. Comparing the average earnings with the outlays there appears to have been a saving of \$24.22 to each family.

Considerable space has been allowed remarks, but the opin-

ions there expressed are too varied and lengthy to be considered here.

Average and classified daily wages (pages 337-372).—This chapter is devoted to a presentation of the average wages and time in operation in the various manufacturing industries in Wisconsin from 1888 to 1895 inclusive. The figures given have, in each case, been compiled from the annual returns of the manufacturers as made to this bureau. The average yearly earnings were obtained by dividing the total amount paid in wages with the average number of persons employed and are, of course, not absolutely safe except for comparison with other figures, or with the wages for other years, obtained in the same manner. Such comparisons have also been made for the eight years covered, and the fluctuations in wages from year to year are clearly shown. The figures for each industry could not be included here but the following table shows, for each year, the totals and the averages drawn therefrom for "All Industries."

Number of establishments reporting, total persons employed and wages paid each year, together with averages obtained from same.

YEAR.	ESTABLISHMENTS REPORTING.	MEN EMPLOYED.		WAGES PAID.			Av. weeks of employment.
		Total.	Av. per establishment.	Total.	Av. per year.	Av. per day.	
1888	1,135	71,218	62.7	\$28,416,694	\$399.01	\$1.44	46.4
1889	1,272	80,504	63.3	32,575,944	404.65	1.45	46.8
1890	1,364	80,880	59.3	33,125,213	400.56	1.43	48.0
1891	1,336	94,069	70.4	38,023,274	404.12	1.44	46.9
1892	1,331	90,966	68.3	38,295,878	421.13	1.46	48.0
1903	1,610	96,540	60.0	37,327,810	386.66	1.42	45.0
1904	1,460	83,642	57.3	31,409,244	375.52	1.38	45.4
1895	1,368	85,767	62.7	32,963,707	384.69	1.37	46.5

In the two following tables the classified daily wages in manufacturing industries for the years 1894 and 1895 are given. The part represented by these tables is a continuation of the returns which have been received annually since 1888 and explained already. These tables give the totals for the state only, the presentations for each industry having necessarily been omitted. In comparing the percentage of the number in each class some interesting changes in the course of wages between the two years may be noticed.

*Classified daily wages in manufacturing industries in Wisconsin,
in 1894.*

Classification of Wages.	Persons employed.	Percent- ages.
\$4.00 per day and over	1,742	2.06
3.50 but under \$4.00	1,134	1.34
3.00 but under 3.50	1,941	2.29
2.50 but under 3.00	4,118	4.86
2.00 but under 2.50	9,761	11.52
1.50 but under 2.00	18,483	21.82
1.25 but under 1.50	18,815	22.22
1.00 but under 1.25	12,892	15.22
.75 but under 1.00	6,643	7.84
.50 but under .75	6,328	7.47
Under 50 cents	2,844	3.36
Aggregates	84,700	100.00

From this it is seen that 37,178 persons or 43.89 per cent. of the whole number reported for 1894 received \$1.50 per day or over. Compared with preceding years this indicates a downward trend in wages.

*Classified daily wages in manufacturing industries in Wisconsin
in 1895.*

Classification of Wages.	Persons employed.	Percent- ages.
\$4.00 per day and over	1,505	1.78
3.50 but under \$4.00	1,095	1.32
3.00 but under 3.50	1,875	2.23
2.50 but under 3.00	4,264	5.07
2.00 but under 2.50	9,090	10.82
1.50 but under 2.00	18,655	22.18
1.25 but under 1.50	20,697	24.61
1.00 but under 1.25	11,489	13.66
.75 but under 1.00	6,289	7.48
.50 but under .75	6,212	7.38
Under 50 cents	2,924	3.47
Aggregates	84,095	100.00

In 1895, 36,484 persons or 43.40 per cent. of the whole number reported received \$1.50 per day or over, a slight decrease below the previous year.

Manufacturing returns (pages 395-504).—The investigation under this head is an effort to show the cost of production and earnings in the manufacturing industries in the state for 1895. The investigation is based upon the returns of 870 establishments in the various lines, covering in detail the capital used, value or selling price of the goods made, and in detail the various expenses which enter into the cost of production. Great efforts were made to secure reliable data; and while the investigation extends beyond the ordinary limits and into a field where

the facts are not easily obtained, it is believed that the results are more than ordinarily accurate. In order to avoid giving publicity to any fact detrimental to business or private interests the presentations are largely in percentages. This mode of treatment was explained to those from whom the data were obtained and undoubtedly contributed to the reliability of the returns. Many firms sent us verified copies of their balance sheet for the year, and the importance of this to an investigation of this kind can hardly be overestimated.

Percentage of total value or selling price, of the stock and material used and wages paid, and other expenses of production including profits in manufacturing industries in Wisconsin for 1895.

INDUSTRIES.	PERCENTAGE OF VALUE OR SELLING PRICES.		
	Materials and supplies.	Labor.	Other factors.
Agricultural implements	53.85	23.21	22.94
Beer and malt	47.04	10.61	42.35
Boxes (packing)	54.46	21.04	24.50
Boxes (paper and cigar)	58.37	20.30	21.33
Boiler works	45.01	27.75	27.24
Boots and shoes	58.10	20.10	21.80
Brass goods	42.86	27.45	29.69
Brick and drain tile	30.06	35.34	34.60
Chairs and chair stock	46.45	33.08	20.47
Cigars	50.22	26.08	23.70
Cloaks and clothing	55.14	18.56	26.30
Cotton and linen mills	51.41	26.38	22.21
Confectionery	56.75	12.54	31.71
Cooperage	55.69	26.72	17.59
Electrical and gas fitting supplies	52.38	18.22	29.40
Excelsior	43.28	19.75	36.97
Flour and feed	84.73	2.88	12.41
Furniture	52.72	26.64	20.64
Furs, gloves and mittens	60.45	17.28	22.27
Hardware specialties	49.33	25.76	24.91
Iron works (malleable)	48.49	34.93	16.58
Kalt goods	55.20	18.98	25.82
Lumber, lath and shingles	52.65	21.22	26.13
Machine shops and foundries	46.71	28.15	25.14
Mattresses and bedding	61.27	18.01	20.72
Paints, oils and greases	73.77	7.36	18.87
Paper and pulp	51.52	18.84	29.64
Refrigerators	37.48	33.20	29.32
Saddlery, harness, etc.	53.83	20.52	25.65
Shed doors and blinds	57.39	21.26	21.35
Sewer pipe and cement	44.82	19.02	36.16
Shipbuilding	39.78	41.92	18.35
Soap, lye and potash	54.89	20.80	24.31
Staves and heading	50.04	27.43	22.53
Stoves, ranges and furnaces	49.24	25.02	25.74
Stone (marble and granite)	34.15	30.87	34.98
Tanners and curriers	67.93	12.70	19.38
Tin ware and sheet iron	46.25	27.63	26.07
Tobacco	67.11	12.73	20.16
Trunks, valises	49.60	22.64	27.76
Veneer	42.42	29.43	28.15
Vinegar	53.78	18.14	28.08
Wagon, carriages, etc.	50.70	23.80	25.50
Willow ware and toys	52.01	28.10	19.89
Woodenware	55.60	23.44	20.96
Woodwork	41.55	33.93	24.52
Woolen and worsted mills	54.14	19.50	26.36
All industries	53.30	22.47	24.23

The presentations for each industry are made in eight tables and show the percentage of each factor of cost of the total cost of production; the percentage of each factor of cost, or expense of the total value or selling price of the product; the relation of the capital used to the product turned out; the proportion of cash capital used to the amount invested in machinery, buildings, etc.; the proportion of wage earners and partners or stockholders; average investment and average profits; and the product and wages to each worker. Detailed explanations of the results can not be made here, but the preceding table shows, by industries, the percentage as based upon the total value of the product of the stock or raw material used, the wages paid and of other expenses including profits.

Building and loan associations (505 to 539).—Tables are presented under this head showing the number of shareholders, shares in force, borrowers, amounts borrowed, assets, profits and losses and other items concerning building and loan associations. Following is a summary of the more important data presented for the fiscal year 1895:

Number of associations reported:		
Serial		26
Permanent		18
Terminating		5
Total		49
Number of shareholders	10,173	
Number of shares in force at the end of year	84,165	
Amount loaned to members during the year	\$815,567	
Withdrawal of matured shares paid during year	\$634,312	
Total loans to shareholders in force at end of year	\$3,174,977	
Total assets at end of year	\$3,496,676	

THE EIGHTH BIENNIAL REPORT, 1897-98 (701 PAGES).

This report consists of three parts: Cost of production of wheat, oats, rye, barley, and corn; factory inspection, including an investigation of child labor; and manufacturers' returns. The introduction to the reports includes, besides an explanation of each investigation, a brief argument for additional factory inspectors and better laws for the regulation of child labor.

Cost of production (pages 1-196).—This part of the report is devoted to an investigation of the cost of production and the selling price of wheat, oats, rye, barley and corn in Wisconsin. Pages 1 to 33 are textual and of an introductory nature. The terms used are defined and the general plan, methods employed and the various elements of expense and value are fully explained. Special attention is given to fertilizers, and the 15

pages devoted to this contain many illustrative tables showing the amount of plant food in the different fertilizing materials and in the soil. The purpose of this is to show the comparative cost of maintaining the productive capacity of the soil or land.

The tabular presentations begin on page 34. Tables I to III inclusive contain the greater part of the data from which the cost and value of 40 reports for each of the crops included have been computed, together with summaries and brief textual explanations of this data.

Tables IV to VII show in detail, per acre, the cost and value of products of 40 acres, with summaries and analysis of same.

Tables VIII to XI inclusive show in detail the cost and value of products of 40 acres of oats, with summaries and analysis.

Tables XII to XV inclusive show cost and value of products, per acre, of 40 acres of rye, with summaries and analysis of same.

Tables XVI to XIX inclusive show in detail cost and value, per acre, of 40 acres of barley, with summaries and analysis.

Tables XX to XXIII inclusive show in detail the cost and value of the products, per acre, of 40 acres of corn, with summaries and analysis of same.

Tables XXIV to XXVI inclusive show the most important data from which the cost of production and value of products of 400 acres of each of the 5 crops have been computed. These computations for each crop are presented in the same form of tables covering the same amount of space and analyzed, in each case, in the same way as those previously explained.

Tables XXVII to XXX inclusive contain the data of 400 acres of wheat.

Tables XXXI to XXXIV inclusive contain the data of 400 acres of oats.

Tables XXXV to XXXVIII inclusive contain the data of 400 acres of rye.

Tables XXXIX to XLII inclusive contain the data of 400 acres of barley.

Tables XLIII to XLVI inclusive contain the data for 400 acres of corn.

Table XLVII contains a compilation of data from 70 reports for each crop. From this data the cost and value of the products of 1,000 acres of each of the five crops, as shown in the five succeeding tables, were computed.

Table LIII includes all the data thus far used, or of 510 reports of each crop. This data, with the final computations made upon it, is carefully analyzed in the text which follows these tables, or on pages 160 to 193 inclusive. The tables which show the final results are reproduced here, and with the diagram showing the proportion of each element of expense appended to each table, give a fair idea of what the investigation accomplished.

In studying the final tables it should be noticed that the data upon which each item of expense is based is given in full in each case; that the expenses are classified under two heads, the "Annual Investment" and "Interest," or fixed charges; and that the yield upon which the cost per bushel is based, is the average of that reported for six crops or years.

To give in detail the data upon which the expenses of the various items have been computed was thought necessary for several reasons. In the first place accessible data relating to the expenses on the farm are scarce, and few opportunities are therefore offered for verification. Then again the figures here, being averages, are not always likely to correspond to those of individual operators, and in such cases the basic data may be the means of a more ready discovery of the causes of any difference. Many who may be interested in the results are also likely to be more familiar with quantity of material and labor which are required in production of crops than with their money value, and to these also the methods adopted may be of some convenience. Generally speaking, it is also in line with good practice in statistical investigations to give the data upon which the conclusions are based whenever possible. Considering these and other facts the methods used would certainly seem justifiable.

The expenses included under "Annual Investment" correspond quite closely to those which in manufactures come under raw material and cash or credit capital. These expenses are necessary in both cases. Farmers as well as manufacturers must have materials as well as money or the means for meeting other outlays. Upon these the manufacturer very properly considers himself entitled to interest out of the proceeds. The farmer is exactly in the same position, and interest upon the "annual investment" is therefore a proper charge. This is also the case with interest on the value of the land, machinery, horses, etc., used. It may be true that the surpluses above expenses in the

past have been large enough to cover the cost of the land and that in such cases it is held that land is paid for or costs nothing. But this is not, as is sometimes argued, a valid reason why interest should not be charged. It is simply instances where farming has been profitable. Almost all farms have a fairly constant cash value. This amount if turned into cash and invested elsewhere would command interest. No one can deny this. If thus left long enough the interest would equal the principal. After reaching this point, however, it would continue to draw interest as before and no one would dispute its right to do so. Why then, it may be asked, should capital invested in land be discriminated against? In order, however, that the expenses which arise from the use of land may be the more easily separated from the annual investment it has been presented separately in connection with other interest charges.

In arriving at the cost per bushel the average yield for six years, 1892-97, was used instead of the yield for any one year or that of the year the investigation was made. The reasons for this are not far to seek. The conditions of farming are peculiar and yield very uncertain. Often the variation from year to year is very great. This is even true on the richest soils and under the best cultivation and management. The cost per acre varies but little with the yield. The cost per bushel, or unit of product, on the other hand, is greatly affected. The figures for one year only are therefore, as a basis, not likely to give the best results. By using the average of a number of years the variation from year to year is largely eliminated. This is certainly true in this case. It is, of course, likely that the cost per bushel, as presented here, will not exactly correspond to the cost on individual farms. On the whole, however, it will be found much nearer the average for a number of farms than if based on yield of any one of the years included. As the farmers reported the yield as well as the price for each year the averages were also easily obtained.

The average yield and price as well as the yield and price for 1896 are presented in foot notes to each table. Two presentations, one with the basic data, the other with diagrams in connection with each item of expense, are also given for each of the five crops included.

Cost of production of wheat.

Classification.	Cost per acre. \$	Cost per bushel. cts.	Per cent- ages.
Plowing 4.53 hours at 11.8 cents	.535	3.05	5.66
Harrowing, etc 1.63 hours at 11.8 cents	.192	1.10	2.03
Seeding ..... .90 hours at 11.8 cents	.106	.61	1.12
Cutting ..... .957 hours at 11.8 cents	.117	.67	1.24
Shocking, ope man..... 1.183 hours at 11.8 cents	.140	.80	1.48
Stacking, etc., two men..... 1.256 hours at 23.6 cents	.296	1.69	3.13
Threshing 17.5 bush. at 2.74 cents	.480	2.74	5.08
Marketing 17.5 bush. at 1.37 cents	.240	1.37	2.54
Seed 1.7 bush. at 72 cents	1.150	6.57	12.17
Taxes, per acre..... 1 acre at 25.6 cents	.256	1.46	2.71
Maintenance of horses, per acre..... 1 acre at 86.7 cents	8.67	4.96	9.18
Fertilizing—2.3 loads manure—labor. 2.3 loads at 30 cents	.690	3.94	7.30
Other expenses, per acre 1 acre at 50 cents	.500	2.86	5.29
Depreciation of mach'y, per acre.. 4.29 dollars at 10 per ct.	.429	2.45	4.54
Depreciation of horses, per acre.. 1.25 dollars at 10 per ct.	.125	.71	1.32
Total annual investment	\$6.123	34.98	64.79
Interest on machinery, per acre. 4.29 dollars at 6 per ct.	.257	1.47	2.72
Interest on horses, per acre..... 1.25 dollars at 6 per ct.	.075	.43	.79
Int. on an. investment, per acre. 6.12 dollars at 6 per ct.	.365	2.03	3.76
Interest on land, per acre..... 44.00 dollars at 6 per ct.	2.640	15.09	27.94
Total cost	\$9.450	54.00	100.00

Investment per acre, \$55.66. Average yield per acre, 6 years, 17.5 bushels. Average price per bushel, 6 years, 61 cents. Average value per acre of straw, \$1.30. Average price per bushel, 1896, 65 cents. Average yield per acre, 1896, 18 bushels.

This table shows the average expense per acre and bushel of one crop of wheat. As is noticed, each item of expense, together with the data upon which it is based, is given in detail. The expenses are also classified into two classes, the "Annual Investment" and "Interest." The former includes labor, material, taxes, depreciation, etc., and constitutes 64.79 per cent. of the total expense. The latter includes interest on the annual investment and on the value of the machinery, horses, and land used and constitutes 35.21 per cent. of the total expense.





















The "annual investment" foots up to \$6.12 per acre and "interest" to \$3.33. This makes the total \$9.45 per acre, or, with a yield of 17.5 bushels per acre, 54 cents per bushel.

The average price per bushel was 61 cents and the value per acre of the straw \$1.30. This makes the total \$11.98 per acre or 68.5 cents per bushel.

On this basis the value exceeded the expense by \$2.50 per acre or 14.5 cents for each bushel.

The investments upon which interest is allowed foot up to \$55.66 per acre, and consist of machinery, horses, annual investment, and land.

Proportion of the various elements of expense in growing wheat.

CLASSIFICATION.	Dollars per acre.	PROPORTIONS.	Per- centages.
Plowing.....	2.535		4.71
Harrowing, etc.....	.280		2.03
Seeding.....	.143		1.23
Cutting.....	.677		5.96
Shocking.....	.920		8.19
Stacking, etc.....	1.340		11.79
Threshing.....	.560		4.93
Marketing.....	.550		4.84
Seed.....	.080		.70
Taxes.....	.256		2.25
Maintenance of horses.....	.867		7.63
Fertilizing.....	.680		6.08
Other expenses.....	.500		4.40
Depreciation of machinery.....	.429		3.78
Depreciation of horses.....	.125		1.10
Interest on value of machinery.....	.257		2.27
Interest on value of horses.....	.075		.66
Interest on annual investment.....	.475		4.18
Interest on value of land—rent.....	2.640		23.24
Total cost.....	9.45		100.00

Cost of production of oats.

Classification.	Cost per acre. \$	Cost per bushel. cts.	Per- cent- ages.
Plowing 4.53 hours at 11.8 cents	.535	1.37	5.66
Harrowing, etc. 1.63 hours at 11.8 cents	.192	.49	2.04
Seeding ..... .90 hours at 11.8 cents	.106	.27	1.12
Cutting ..... .987 hours at 11.8 cents	.117	.30	1.24
Shocking, one man..... 1.183 hours at 11.8 cents	.140	.36	1.48
Stacking, etc., two men..... 1.256 hours at 11.8 cents	.296	.76	3.14
Threshing, 1'b'r and chgs., thresher 39 bush. at 1.75 cents	.680	1.74	7.20
Marketing 39 bush. at .77 cents	.300	.77	3.18
Seed 2.5 bush. at 35 cents	.880	2.25	9.32
Taxes 1 acre at 25.6 cents	.256	.66	2.71
Maintenance of team 1 acre at 86.7 cents	.867	2.22	9.18
Fertilizing, 2.3 loads manure..... 2.3 loads at 30 cents	.690	1.77	7.31
Other expenses, per acre 1 acre at 50 cents	.500	1.28	5.30
Depreciation of machinery 4.29 dollars at 10 per cent.	.429	1.10	4.55
Depreciation of horses 1.25 dollars at 10 per cent.	.125	.33	1.32
Total annual investment	\$6.113	15.67	64.75
Interest on machinery..... 4.29 dollars at 6 per cent.	.257	.66	2.73
Interest on horses 1.25 dollars at 6 per cent.	.075	.19	.79
Interest on an. investment..... 6.11 dollars at 6 per cent.	.355	.91	3.76
Interest on land, rent 44.00 dollars at 6 per cent.	2.640	6.77	27.97
Total cost	\$9.440	24.20	100.00

Investment per acre, \$55.65. Average yield per acre, 6 yrs., 39 bushels. Average price per bushel, 6 years, 26 cents. Average value per acre of straw, \$2.30. Average price per bushel, 1896, 17 cents. Average yield per acre, 1896, 41 bushels.

From the above presentation is seen that of the expenses of growing oats the annual investment covers 64.75 per cent., while interest at current rates on the capital used covers the balance, or 35.25 per cent.





















The Annual Investment includes all labor and material used, taxes and the depreciation of land, machinery and horses used, or cash outlays, and on the value of machinery, horses and land used.

The average expense per acre and bushel for the state was \$9.44 and 24.20 cents, respectively.

The average value per acre of the products, the same year, was \$10.14 for the grain and \$2.30 for the straw, or a total of \$12.44. This is equivalent to a profit of \$3.00 per acre or 7.7 cents per bushel.

The investments, or amounts upon which interest is charged are: Machinery \$4.29, horses \$1.25, annual investment, or labor and material, \$6.11, land \$44.00, or an aggregate of \$55.65.

Proportion of the various elements of expense in growing oats.

CLASSIFICATION.	Dollars per acre.	PROPORTIONS.	Per- centages.
Plowing.....	.535		5.56
Harrowing, etc.....	.192		2.04
Seeding.....	.106		1.12
Cutting.....	.117		1.24
Shocking.....	.140		1.48
Stacking, etc.....	.296		3.14
Threshing.....	.680		7.20
Marketing.....	.300		3.18
Seed.....	.880		9.32
Taxes.....	.256		2.71
Maintenance of horses.....	.867		9.18
Fertilizing.....	.680		7.31
Other expenses.....	.500		5.30
Depreciation of machinery.....	.429		4.55
Depreciation of horses.....	.125		1.32
Interest on value of machinery.....	.237		2.73
Interest on value of horses.....	.075		.79
Interest on annual investment.....	.355		3.76
Interest on value of land—rent.....	2.640		27.97
Total cost.....	9.440		100.00

Cost of production of barley.

Classification.		Cost per acre. \$	Cost per bushel. cts.	Per- cent- ages.
Plowing	4.53 hours at 11.8 cents	.535	1.78	5.58
Harrowing, etc.	1.63 hours at 11.8 cents	.192	.64	2.00
Seeding .....	.90 hours at 11.8 cents	.106	.35	1.11
Cutting .....	.987 hours at 11.8 cents	.117	.39	1.22
Shocking	1.183 hours at 11.8 cents	.140	.48	1.46
Stacking, etc.	1.256 hours at 23.6 cents	.296	.99	3.09
Threshing, per acre	30 bush. at 2.21 cents	.663	2.21	6.92
Marketing	30 bush. at 1.26 cents	.380	1.26	3.96
Seed	2.1 bush. at 45 cents	.950	3.17	9.92
Taxes, average per acre	1 acre at 25.6 cents	.256	.85	2.67
Maintenance of horses	1 acre at 86.7 cents	.867	2.89	9.06
Fertilizing manure	2.3 loads at 30 cents	.690	2.30	7.20
Other expenses	1 acre at 50 cents	.500	1.67	5.22
Depreciation of machinery	4.29 dollars at 10 per cent.	.429	1.43	4.48
Depreciation of horses	1.25 dollars at 10 per cent.	.125	.42	1.32
Annual investment		\$6.246	20.81	65.20
Interest on val. machinery	4.29 dollars at 6 per cent.	.257	.86	2.68
Interest on val. horses	1.25 dollars at 6 per cent.	.075	.25	.79
Interest on av. investment	6.25 dollars at 6 per cent.	.363	1.21	3.79
Interest on val. land	44.00 dollars at 6 per cent.	2.640	8.80	27.55
Total cost per acre		\$9.581	31.93	100.00

Investment per acre, \$55.79. Average yield per acre, 6 years, 30 bushels. Average price per bushel, 6 years, 43 cents. Average value per acre of straw, \$1.50. Average price per bushel, 1896, 28 cents. Average yield per acre, 1896, 32 bushels.





















The above table shows that the expenses of growing barley footed up to \$9.58 per acre, or 31.93 cents per bushel. Of this amount the annual investment constituted 65.20 per cent. and interest 34.80 per cent.

With a yield of 30 bushels per acre and the price at 43 cents per bushel the value of the grain amounted to \$12.90. If to this is added the straw which was placed at \$1.50 per acre the total value grows to \$14.40 per acre or 48 cents per bushel.

A comparison of expenses and value thus shows a net balance per acre and bushel in favor of the farmer of \$4.82 and 16 cents, respectively.

The total investment per acre for one crop or the amount upon which the farmer is entitled to interest is \$55.79. Of this 7.69 per cent. is for machinery, 2.24 per cent. for horses, 13 per cent. for the annual investment of labor and capital, and 77.07 per cent. is for rent or the use of the land.

Proportion of the various elements of expense in growing barley.

CLASSIFICATION.	Dollars per acre.	PROPORTIONS.	Per- centages.
Plowing.....	.835		8.35
Harrowing, etc.....	.192		1.92
Seeding.....	.108		1.08
Cutting.....	.117		1.17
Shocking.....	.140		1.40
Stacking, etc.....	.296		2.96
Threshing.....	.663		6.63
Marketing.....	.330		3.30
Seed.....	.950		9.50
Taxes.....	.256		2.56
Maintenance of horses.....	.867		8.67
Fertilizing.....	.680		6.80
Other expenses.....	.500		5.00
Depreciation of machinery.....	.429		4.29
Depreciation of horses.....	.125		1.25
Interest on value of machinery.....	.237		2.37
Interest on value of horses.....	.075		.75
Interest on annual investment.....	.363		3.63
Interest on value of land—rent.....	2.640		26.40
Total cost.....	9.531		100.00

Cost of production of rye.

Classification.		Cost per acre. \$	Cost per bushel. cts.	Per- cent- ages.
Plowing	4.53 hours at 11.8 cents.	.535	2.97	5.88
Harrowing, etc.	1.63 hours at 11.8 cents	.192	1.07	2.11
Seeding .....	.90 hours at 11.8 cents	.106	.59	1.16
Cutting .....	.987 hours at 11.8 cents	.117	.65	1.26
Shocking	1.183 hours at 11.8 cents	.140	.78	1.54
Stacking, etc.	1.256 hours at 23.6 cents	.296	1.65	3.25
Threshing	18 bush at 2.81 cents	.510	2.83	5.62
Marketing	18 bush. at 1.28 cents	.230	1.28	2.53
Seed	1.6 bush. at 50 cents	.800	4.44	8.79
Taxes, average per acre	1 acre at 25.6 cents	.256	1.42	2.81
Maintenance of w'k horses.....	1 acre at 86.7 cents	.867	4.82	9.63
Fertilizing manure	2.3 loads at 30 cents	.690	3.83	7.68
Other expenses	1 acre at 50 cents	.500	2.78	5.50
Depreciation of machinery	4.29 dollars at 10 per cent.	.429	2.38	4.71
Depreciation of horses.....	1.25 dollars at 10 per cent.	.125	.69	1.37
Annual investment		\$5.793	32.18	63.66
Interest on machinery.....	4.29 dollars at 6 per cent.	.257	1.43	2.82
Interest on horses	1.25 dollars at 6 per cent.	.075	.42	.83
Interest on annual investment..	5.79 dollars at 6 per cent.	.335	1.86	3.68
Interest on land	44.00 dollars at 6 per cent.	2.640	14.06	29.01
Total cost		\$9.100	50.55	100.00





















Average investment per acre, \$55.33. Average yield per acre, 6 years, 18 bushels. Average price per bushel, 6 years, 45 cents. Average value per acre of straw, \$2.20. Average price per bushel, 1896, 33 cents. Average yield per acre, 1896, 20 bushels.

From the above table, which shows the cost of production of rye in Wisconsin, we find that the average expense was \$9.14 per acre or 50.55 cents per bushel. Of this the outlays for labor, materials, taxes and depreciation amounts to 63.66 per cent. and the outlays for rent of land and interest on other capital used foots up to 36.34 per cent., or to a little over one-third of the total expense.

During the period covered by this investigation the average value of the products was \$8.10 for the grain and \$2.20 for the straw, or a total of \$10.30 or 57.11 cents. If this is compared with the above cost there is a balance in the favor of the farmer of \$1.20 per acre.

The investment upon which interest has been allowed foots up for machinery, horses, annual investment, and land to \$55.33 per acre.

Proportion of the various elements of expense in growing rice.

CLASSIFICATION.	Cost per acre.	PROPORTIONS.	Per- centage.
Plowing.....	\$.535		5.83
Harrowing, etc.....	.192		2.11
Seeding.....	.108		1.16
Cutting.....	.117		1.26
Stocking.....	.140		1.54
Stacking, etc.....	.296		3.25
Threshing.....	.510		5.62
Marketing.....	.230		2.53
Seed.....	.800		8.79
Taxes.....	.256		2.81
Maintenance of horses.....	.867		9.53
Fertilizing.....	.680		7.53
Other expenses.....	.500		5.50
Depreciation of machinery.....	.429		4.71
Depreciation of horses.....	.125		1.37
Interest on value of machinery.....	.257		2.82
Interest on value of horses.....	.075		.83
Interest on annual investment.....	.385		3.93
Interest on value of land—rent.....	2.640		29.01
Total cost.....	9.100		100.00

Cost of production of corn.

Classification.	Cost per acre. \$	Cost per bushel. cts.	Per- cent- ages.
Plowing 4.53 hours at 11.8 cents	\$.535	1.28	\$4.71
Harrowing, etc. 1.96 hours at 11.8 cents	.230	.55	2.03
Planting 1.21 hours at 11.8 cents	.143	.34	1.26
Cultivating 5.72 hours at 11.8 cents	.877	1.61	5.96
Cutting by hand 7.86 hours at 11.8 cents	.930	2.21	8.19
Husking by hand 11.32 hours at 11.8 cents	1.340	3.19	11.79
Marketing 42 bushels at 1.34 cents	.560	1.33	4.93
Shelling 42 bushels at 1.30 cents	.550	1.31	4.84
Seed 2 bushels at 40. cents	.080	.19	.70
Taxes 1 acre at 25.6 cents	.256	.61	2.25
Maintenance of horses. 1 acre at 86.7 cents	.867	2.07	7.63
Fertilizing 2.3 loads manure..... 2.3 loads at 30 cents	.690	1.64	6.08
Other expenses estimated per..... 1 acre at 50. cents	.500	1.19	4.40
Depreciation of machinery 4.29 dollars at 10 per cent.	.429	1.02	3.78
Depreciation of horses 1.25 dollars at 10 per cent.	.125	.30	1.10
Total annual investment	\$7.912	18.84	69.65
Interest on machinery..... 4.29 dollars at 6 per cent.	.257	.61	2.27
Interest on horses 1.25 dollars at 6 per cent.	.075	.18	.66
Interest ann. investment..... 7.91 dollars at 6 per cent.	.475	1.24	4.18
Interest on land 44.00 dollars at 6 per cent.	2.640	6.28	23.24
Total cost	\$11.359	27.15	100.00

Investment per acre, \$7.45. Average yield per acre, 42 bushels. Average price per bushel, 34 cents. Average value per acre of stalks, \$3.00. Average price per bushel, 1896, 28 cents. Average yield per acre, 1896, 44 bushels.

The above table shows in detail the various items of expense in the production of corn, the data upon which each item is computed and the average cost per acre and bushel for the state.

The expense of labor, material, taxes, depreciation, etc., are summed up under the annual investment, and for one crop foot up to \$7.91 per acre or 18.84 cents per bushel, and constitutes 69.65 per cent. of the total expense. The interest on the annual investment and the value of machinery, horses, and land used foot up to \$3.45 per acre, or 8.31 cents per bushel, and constitutes 30.35 per cent. of the total expense. The total expense thus amounts to \$11.36 per acre or 27.15 cents per bushel.

The value of each crop during the same period was \$14.28 for the corn and \$3.00 per acre for the stalks, or a total of \$17.28 per acre.

Comparing the expenses of the products with their value it is thus found that the latter exceeds the former by \$5.92 per acre or 14.10 cents per bushel.

The investments upon which interest is charged are divided among machinery, horses, annual investment, and land, and foot up to \$57.45 per acre.

Proportion of the various elements of expense in growing corn.

CLASSIFICATION.	Cost per bush.	PROPORTION.	Per- centage.
Plowing.....	\$.535		4.71
Harrowing, etc.....	.230		2.03
Planting.....	.143		1.26
Cultivating.....	.677		5.96
Cutting.....	.930		8.19
Husking.....	1.340		11.79
Marketing.....	.560		4.93
Shelling.....	.550		4.84
Seed.....	.080		.70
Taxes.....	.256		2.25
Maintenance of horses.....	.887		7.68
Fertilizing.....	.680		6.08
Other expenses.....	.500		4.40
Depreciation of machinery.....	.429		3.78
Depreciation of horses.....	.125		1.10
Interest on value of machinery.....	.257		2.27
Interest on value of horses.....	.075		.66
Interest on An. investment.....	.475		4.19
Interest on value of land—rent.....	2.640		23.24
Total cost.....	11.359		100.00

Statistics of manufactures (pages 555 to 702).—This part embraces statistics relating to manufactures in this state for 1896 and 1897. In all 1,499 establishments reported. Of these 1,245 reported as to the number of partners or stockholders, the amount of capital used, the cost of the stock and supplies which entered into the products, the respective amounts paid as wages and salaries, the total value of products, the proportion of business done, the number of persons employed by the hour, day, month or piece, and the average for each month, and classified weekly wages; and 244 establishments reported as to the amount paid as wages, the persons employed, and classified weekly wages. As these returns were obtained from identical establishments and prepared on the same basis, and also cover about 70 per cent. of the manufacturing interests in the state, the increase and decrease between these two years, as shown in the comparisons, indicates the trend of business in the various industries.

The following tables show, by industries, the capital used, the cost of stock and supplies, the amount paid as wages, the total value of the products, the range of employment and a summary for "All Industries."

Capital invested.—By this is meant the value of land, buildings, machinery, tools, etc., used; the material on hand at end of fiscal year, and the cash and credit capital employed. The next table shows, for each industry, the amount of capital used in 1896 and 1897 and, by amount and percentage, the increase and decrease between the two years, as the case may be.

CAPITAL INVESTED BY INDUSTRIES.

1896 AND 1897.

The capital invested by 1,245 establishments is represented in the following table. Comparison is made between the two years, and the relative increase or decrease is noted by amount and percentages.

INDUSTRIES.	No. of establishments.	AMOUNT OF CAPITAL INVESTED.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Amounts.	Per cent.
Agricultural implements	31	\$6,247,280	\$7,826,158	+\$1,578,878	+25.27
Artisans' tools and hardware special ties	10	575,979	585,053	+9,074	+1.57
Bicycles, tricycles, etc.	7	715,272	980,049	+264,777	+31.42
Boots and shoes	24	1,955,624	1,900,423	-55,201	-2.90
Boxes (wooden and paper)	28	1,156,913	1,480,139	+323,226	+27.92
Brick, tiles and sewer pipe	28	927,437	903,110	-24,327	-2.62
Brooms, brushes and baskets	19	212,499	193,093	-19,406	-9.18
Burial cases, caskets, coffins, etc.	4	266,500	349,500	+83,000	+31.14
Cement, lime, plaster, etc.	1	986,215	1,046,205	+59,990	+6.08
Chairs	13	3,470,281	3,835,742	+365,461	+10.53
Cigars, snuff and tobacco	54	1,314,237	1,616,419	+302,182	+22.99
Clothing	25	1,676,938	1,719,252	+42,316	+2.52
Confectioneries, crackers, etc.	12	624,741	671,742	+47,001	+7.52
Cooking and heating apparatus	24	1,375,296	1,737,501	+362,205	+26.33
Cooperage	21	526,788	530,250	+3,462	+0.67
Cotton and linen goods	5	617,171	668,349	+51,178	+8.29
Electrical and gas apparatus and supplies	21	1,713,612	2,086,608	+372,996	+21.70
Flour and feed	38	6,449,116	7,411,133	+962,017	+14.91
Food preparations	31	4,117,091	4,751,285	+634,194	+15.40
Furniture	42	3,045,192	2,776,295	-268,897	-8.83
Furs, gloves and mittens	11	286,323	351,395	+65,072	+22.73
Iron goods (malleable)	25	4,223,641	4,427,480	+203,839	+4.82
Knit goods	15	1,440,606	1,756,464	+315,858	+21.92
Lager beer	71	33,943,545	35,539,091	+1,595,546	+4.66
Leather	33	10,394,318	12,124,012	+1,729,694	+16.64
Lumber, lath and shingles	168	44,969,633	45,642,002	+672,369	+1.45
Malt	20	4,313,614	5,028,807	+705,993	+16.44
Machines and machinery	86	8,244,923	9,038,030	+793,107	+9.77
Office and saloon fixtures, etc.	15	903,420	816,966	-86,454	-9.56
Paints, oils and crude chemicals	7	699,000	922,750	+223,750	+32.15
Paper and pulp	34	8,224,977	9,014,723	+789,746	+9.60
Printers' supplies	4	213,934	264,355	+50,421	+23.56
Saddlery, harness, etc.	9	196,468	202,989	+6,521	+3.31
Nash, doors, blinds, etc.	73	5,504,932	5,541,357	+36,425	+0.66
Sheet metal goods	26	2,732,280	2,673,622	-58,658	-2.14
Ship and boat building	6	1,494,344	1,495,259	+915	+0.06
Soap, lye, potash, etc.	9	509,000	521,289	+12,289	+2.41
Staves and heading	21	333,249	425,741	+92,492	+27.75
Stone (granite, marble, etc.)	10	316,826	224,876	-91,950	-29.02
Straw goods	5	626,915	704,900	+77,985	+12.23
Toys and games	5	308,068	337,624	+29,556	+9.58
Trunks, valises, etc.	9	807,539	834,179	+26,640	+3.29
Veneer	9	232,837	305,224	+72,387	+31.08
Wagons, carriages and sleighs	53	4,258,192	5,288,915	+1,030,723	+24.20
Woodenware	11	988,836	1,030,234	+40,398	+4.08
Woolen and worsted goods	17	1,752,474	2,200,279	+447,805	+25.90
All industries	1245	\$175,905,124	\$189,760,669	+\$13,855,545	+7.87

For the 1,245 establishments included in above table, the capital used was \$175,905,124 in 1896 and \$189,760,669 in

1897, or an increase in the latter year of \$13,855,545 or 7.87 per cent.

Stock or material used.—This means all kinds of stock and material used in manufacturing or entering into the finished product of each establishment, and includes besides supplies of all kinds such as fuel, boxes, barrels, light, etc. The next table shows, for each industry, the amount of stock used each year; also the increase or decrease as between the two years.

It appears from this table that of the 46 industries included 34 consumed more material in 1897 than in 1896, and that 12 used less. The total value of the material used, by all industries, or by the 1,245 establishments was \$87,027,266 in first and \$98,130,070 in the second year. In 1897, therefore, the amount of the material used exceeded that of the former year by \$11,102,804, or 12.76 per cent.

STOCK OR MATERIAL USED—BY INDUSTRIES.

1896 AND 1897.

The figures given in the table below for stock or material used, represent the amount reported by 1,245 establishments for both years. Comparison is made between the two years, and the relative increase or decrease is noted by amount and percentages.

INDUSTRIES.	No. of establishments.	VALUE OF STOCK OR MATERIAL USED.		INCREASE (+) OR DECREASE (—) IN 1897.	
		1896.	1897.	Amounts.	P er cent.
Agricultural implements	31	\$2,268,960	\$2,174,798	—\$94,162	—4.15
Artisans' tools and hardware specialties	10	267,856	237,492	—30,363	—11.33
Bicycles, tricycles, etc.....	7	776,799	910,253	+133,450	+17.18
Boots and shoes	24	1,742,081	1,863,766	+241,686	+11.84
Boxes (wooden and paper)	29	836,500	1,030,849	+132,349	+14.72
Brick, tiles and sewer pipes	23	69,573	66,990	—2,583	—3.71
Brooms, brushes and baskets	19	74,303	73,355	—948	—1.27
Burial cases, caskets, coffins, etc	4	222,156	284,192	+62,036	+27.92
Cement, lime, plaster, etc.....	12	306,188	277,909	—30,379	—9.85
Chairs	13	1,007,428	1,077,342	+69,914	+6.94
Cigars, snuff and tobacco	54	1,265,515	1,324,351	+58,836	+4.69
Clothing	25	1,422,387	1,563,326	+141,439	+12.05
Confectioneries, crackers, etc.....	12	813,543	961,630	+148,087	+20.65
Cooking and heating apparatus.....	24	476,672	543,267	+66,595	+13.92
Cooperage	21	441,433	346,976	—94,457	—21.39
Cotton and linen goods.....	5	265,271	320,070	+54,799	+20.66
Electrical and gas apparatus and supplies	21	829,599	870,782	+41,183	+4.95
Flour and feed	36	15,839,410	18,724,677	+2,885,167	+17.84
Food preparations	31	10,173,349	11,338,906	+1,165,556	+11.45
Furniture	42	1,446,760	1,333,603	—113,157	—7.95
Furs, gloves and mittens	11	429,302	309,404	—119,898	—27.98
Iron goods (malleable)	25	2,753,694	3,010,246	+256,552	+9.31
Knit goods	15	626,073	792,277	+166,204	+26.54
Lager beer	71	3,270,795	3,702,671	+431,876	+13.20
Leather	33	9,789,314	11,320,816	+1,531,502	+15.64
Lumber, lath and shingles	168	9,861,062	12,187,522	+2,326,460	+23.59
Malt	20	2,376,625	2,451,507	+74,882	+3.29
Machines and machinery.....	36	3,059,369	3,333,014	+273,645	+8.94
Office and saloon fixtures, etc.....	15	286,487	261,905	—24,582	—8.29
Paints, oils and crude chemicals ...	7	880,613	926,568	+45,950	+5.21
Paper and pulp	34	3,392,882	3,481,577	+88,695	+2.61
Printers' supplies	4	97,081	90,968	—6,113	—6.29
Saddlery, harness, etc.....	9	149,623	236,897	+87,274	+58.32
Sash, doors, blinds, etc.....	73	2,680,742	2,879,007	+198,265	+7.39
Sheet metal goods	26	1,708,597	1,898,543	+189,946	+11.11
Ship and boat building	6	493,613	290,677	—202,936	—41.13
Soup, lye, potash, etc.....	9	238,982	382,099	+143,117	+60.92
Staves and heading	21	186,673	230,193	+43,515	+23.31
Stone, (granite, marble, etc.).....	10	111,396	113,896	+2,500	+2.24
Straw goods	5	330,751	300,168	—29,583	—8.89
Toys and games	5	94,333	97,361	+3,028	+3.24
Trunks, valises, etc.....	9	359,010	411,193	+52,183	+14.53
Veneer	9	102,124	137,248	+35,124	+34.89
Wagons, carriages and sleighs.....	53	1,522,409	2,116,750	+594,341	+39.03
Woodenware	11	922,041	767,692	—154,349	—16.73
Woolen and worsted goods	17	652,750	844,629	+191,879	+29.70
All industries	1245	\$87,027,266	\$98,130,070	+\$11,102,804	+12.76

Wages paid.—By this is meant the paid mechanics, operatives and laborers during the year or period covered as distinct from the amount paid as salaries to officials and office assistance. The amount thus paid each year by 1,499 establishments in the different industries is shown as follows:

WAGES PAID—BY INDUSTRIES.

1896 AND 1897.

By "Total amount paid in wages" is meant the combined amount paid by the 1,499 establishments for that purpose in each year. Comparisons are made between the two years, and the relative increase or decrease is noted by amount and percentages. Wage earners only are considered; officers, clerks and other salaried persons are not included.

INDUSTRIES.	No. of establishments.	TOTAL AMOUNT OF WAGES PAID DURING YEAR.		INCREASE (+) OR DECREASE (—) IN 1897.	
		1896.	1897.	Amount.	Per cent.
Agricultural implements	31	\$999,822	\$938,930	— \$60,892	—6.09
Artisans' tools and hardware specialties	10	170,303	182,604	+12,300	+7.22
Beverages (not spirituous, sold in drinks)	18	82,665	93,072	+10,407	+12.58
Bicycles, tricycles, etc.	7	306,808	325,609	+18,804	+6.12
Boots and shoes	24	622,611	636,972	+14,361	+10.33
Boxes (wooden and paper)	29	336,175	404,765	+68,590	+20.40
Brick, tile and sewer pipe	23	79,028	79,627	+599	+0.75
Brooms, brushes and baskets	19	54,895	62,384	+7,489	+13.64
Burial cases, caskets and coffins	4	98,540	109,629	+11,089	+11.25
Cement, lime, plaster, etc.	12	148,012	147,190	—822	—0.55
Chairs	13	772,212	892,360	+120,148	+15.55
Chemical preparations	13	86,961	100,211	+13,250	+15.23
Cigars, snuff and tobacco	54	411,006	441,261	+30,255	+7.36
Clothing	25	502,569	532,238	+29,669	+5.90
Coal and wood	28	663,258	879,412	+216,154	+32.58
Confectioneries, crackers, etc.	12	233,465	262,890	+29,425	+12.60
Cooking and heating apparatus	24	416,931	458,670	+41,739	+10.01
Cooperage	21	226,766	213,079	—13,687	—6.03
Cotton and linen goods	5	111,746	117,219	+5,473	+4.90
Electrical and gas apparatus and supplies	21	486,288	497,164	+10,876	+2.23
Electric and gas lighting, power and street railways	49	1,094,016	1,220,541	+126,525	+11.56
Fancy articles	8	33,933	41,576	+7,642	+22.52
Flour and feed	86	547,830	586,731	+38,901	+6.73
Food preparations	31	852,282	898,879	+46,597	+5.46
Furniture	42	794,964	727,762	—67,202	—8.45
Furs, gloves and mittens	11	125,843	91,034	—34,809	—27.66
Grain and warehouse men	12	91,487	105,810	+14,323	+15.65
Iron goods (malleable)	25	1,484,112	1,518,760	+34,648	+2.33
Iron (pig)	2	44,251	52,807	+8,556	+19.33
Knit goods	15	324,212	399,430	+75,218	+23.20
Lager beer	71	1,649,640	1,686,463	+36,823	+2.23
Laundries	75	219,168	231,775	+12,607	+5.75
Leather	33	1,790,571	2,023,342	+232,771	+13.28
Lithographing and engraving	7	206,844	222,156	+15,312	+7.40
Lumber, lath and shingles	168	3,904,245	4,566,264	+662,019	+16.95
Malt	20	286,966	296,437	+9,471	+3.30
Machines and machinery	86	2,195,742	2,343,671	+147,929	+6.73
Mixed textiles	9	80,851	77,205	—3,646	—4.50
Office and saloon fixtures, etc.	15	258,154	229,011	—29,143	—11.28
Paints, oils and crude chemicals	7	76,304	80,128	+3,824	+5.01

WAGES PAID—BY INDUSTRIES—Continued.

1896 AND 1897.

By "Total amount paid in wages" is meant the combined amount paid by the 1,499 establishments for that purpose in each year. Comparisons are made between the two years, and the relative increase or decrease is noted by amount and percentages. Wage earners only are considered; officers, clerks and other salaried persons are not included.

INDUSTRIES.	No. of establishments.	TOTAL AMOUNT OF WAGES PAID DURING YEAR.		INCREASE (+) OR DECREASE (—) IN 1896.	
		1896.	1897.	Amount.	Per cent.
Paper and pulp	34	1,243,243	1,240,476	—2,767	—0.22
Printers' supplies	4	69,532	71,751	—2,219	—3.19
Railroad equipment	20	2,961,851	5,603,289	+2,661,438	+89.82
Saddlery, harness, etc.	9	54,734	82,136	+27,402	+50.06
Sash, doors, blinds, etc.	73	1,066,510	1,159,449	+72,939	+8.71
Sheet metal goods	26	562,140	621,091	+58,951	+10.48
Ship and boat building	6	\$507,701	\$262,606	—\$245,096	—48.26
Soap, lye, potash, etc.	9	50,186	71,700	+21,514	+42.86
Staves and heading	21	116,035	156,852	+40,817	+35.17
Stone (marble, granite, etc.)	10	79,783	83,756	+3,973	+4.97
Straw goods	5	210,942	191,874	—19,068	—9.03
Toys and games	5	64,468	68,676	+4,208	+6.54
Trunks, valises, etc.	9	181,359	203,931	+22,572	+12.44
Veneer	9	87,088	119,510	+32,422	+37.23
Wagons, carriages and sleighs	53	736,689	961,241	+214,552	+29.12
Woodenware	11	513,206	421,260	—91,946	—17.91
Woolen and worsted goods	17	234,685	310,176	+75,491	+32.16
Miscellaneous	13	128,194	133,209	+5,015	+3.91
All Industries	1499	\$31,749,822	\$36,583,044	+\$4,833,222	+15.22

Examining the above table we find that 46 industries paid out a greater sum in wages in 1897 than in the preceding year, and that 12 industries paid out less. As between the total amount paid by all industries there is a difference in favor of 1897 of \$4,833,222, or 15.22 per cent., the total for 1896 being \$31,749,822 as against \$36,583,044 in 1897. It should be noticed that while this table includes 12 industries or 244 establishments in addition to those in the two foregoing tables, the amount for each appears separately and can therefore be readily separated should this for any reason be desired.

Goods made or work done.—By this is meant the total value or selling price of the products of the years covered, and in the production of which the foregoing expenditures for material and wages have been incurred and the capital, as presented, used. This presentation is made in the following table:

GOODS MADE AND WORK DONE—BY INDUSTRIES.

1896 AND 1897.

The figures given for value of goods made and work done, represent the value of goods made and work done in the 1,245 establishments reporting for both years. Comparison is made between the two years and the relative increase or decrease is noted by amount and percentages.

INDUSTRIES.	No. of establishments.	VALUE OF GOODS MADE AND WORK DONE.		INCREASE (+) OR DECREASE (—) IN 1897.	
		1896.	1897.	Amounts.	Per cent.
Agricultural implements	31	\$4,529,474	\$4,242,134	—\$287,340	—6.22
Artisans' tools and hardware specialties	10	712,165	624,404	—87,761	—12.32
Bicycles, tricycles, etc.	7	1,340,014	1,509,852	+169,838	+12.67
Boots and shoes	24	3,018,633	3,416,422	+397,789	+13.17
Boxes (wooden and paper)	29	1,615,386	1,849,962	+234,566	+14.52
Brick, tiles and sewer pipe	23	235,040	225,824	—9,216	—3.92
Brooms, brushes and baskets	19	178,618	174,404	—4,214	—2.36
Burial cases, caskets, coffins, etc.	4	447,913	559,898	+111,985	+25.00
Cement, lime, plaster, etc.	12	683,834	603,310	—80,524	—11.77
Chairs	13	2,299,371	2,494,412	+195,041	+8.48
Cigars, snuff and tobacco	54	2,085,317	2,206,005	+120,688	+5.78
Clothing	25	2,670,425	2,966,324	+296,399	+10.72
Confectioneries, crackers, etc.	12	1,450,215	1,570,201	+119,986	+8.27
Cooking and heating apparatus	24	1,185,068	1,325,252	+140,184	+11.83
Cooperage	21	893,735	717,497	—176,238	—19.71
Cotton and linen goods	5	472,278	546,324	+74,046	+15.67
Electrical and gas apparatus and supplies	21	2,162,352	2,156,197	—6,155	—0.28
Flour and feed	86	19,186,233	22,016,961	+2,830,748	+14.75
Food preparations	31	12,583,578	13,717,083	+1,133,505	+9.00
Furniture	42	3,036,842	2,776,577	—260,265	—8.57
Furs, gloves and mittens	11	750,019	528,438	—221,572	—29.54
Iron goods (malleable)	25	6,183,803	6,342,249	+158,446	+2.56
Knit goods	15	1,330,961	1,654,638	+323,677	+24.31
Lager beer	71	15,394,071	16,946,217	+1,551,146	+10.07
Leather	33	13,445,346	15,153,361	+1,708,015	+12.70
Lumber, lath and shingles	168	18,322,764	22,043,162	+3,720,398	+20.30
Malt	20	3,578,934	3,681,990	+103,056	+2.87
Machines and machinery	86	7,662,023	8,155,581	+493,558	+6.44
Office and saloon fixtures, etc.	15	753,398	687,727	—65,671	—8.71
Paints, oils and crude chemicals	7	1,247,149	1,315,557	+68,408	+5.48
Paper and pulp	34	6,592,166	6,555,806	—36,360	—0.55
Printers' supplies	4	222,555	230,469	+7,914	+3.55
Saddlery, harness, etc.	9	276,188	414,175	+137,987	+49.96
Sash, doors, blinds, etc.	73	5,002,046	5,260,706	+258,661	+5.17
Sheet metal goods	26	3,150,438	3,376,417	+225,989	+7.10
Ship and boat building	6	1,202,260	666,473	—535,787	—44.57
Soap, lye, potash, etc.	9	430,987	675,411	+244,424	+56.71
Staves and heading	21	418,398	524,414	+106,016	+25.33
Stone (granite, marble, etc.)	10	311,417	311,886	+469	+0.15
Straw goods	5	789,652	852,521	+62,869	+7.96
Toys and games	5	225,587	226,606	+1,019	+0.45
Trunks, valises, etc.	9	758,118	848,396	+90,278	+11.90
Veneer	9	283,675	373,469	+89,794	+31.66
Wagons, carriages and sleighs	53	3,121,558	4,256,269	+1,134,701	+36.67
Woodenware	11	1,700,831	1,560,357	—140,456	—8.25
Woolen and worsted goods	17	1,212,072	1,613,817	+401,745	+33.14
All industries	1245	\$155,152,906	\$169,946,673	+\$14,793,767	+9.53

The total value or selling price of the goods made or work done in the 46 industries embracing 1,245 establishments was \$155,-152,906 in 1896 and \$169,946,673 in 1897, a balance in favor of the latter year of \$14,793,767 or 9.53 per cent.

Number of persons employed.—By this is meant the average number of persons employed throughout the year, the smallest number employed at the lowest period of employment, and the greatest number employed at the highest period of employment. This data was obtained from each establishment for the purpose of ascertaining the range of employment or unemployment during each year. The summaries of each industry are given in the following two tables:

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED
—BY INDUSTRIES.

The terms "Period of Employment of Smallest Number" and "Period of Employment of Greatest Number," as used in the following table, are meant those times, *as regards aggregate number of persons employed*, when the smallest or greatest number, respectively, was employed. Wage earners only are considered; officers, clerks or other salaried persons are not included.

AGGREGATES—1896.

INDUSTRIES.	No. of establishments.	Aggregate average number of persons employed.	AGGREGATE OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF—		Excess greatest over smallest number.
			Smallest number.	Greatest number.	
Agricultural implements	31	1,856	1,517	2,513	996
Artisans' tools and hardware specialties	10	369	232	477	245
Beverages (not spirituous, soft drinks) ..	18	186	136	247	111
Bicycles, tricycles, etc.	7	677	309	971	662
Boots and shoes	24	2,239	2,012	2,435	423
Boxes (wooden and paper)	29	1,195	1,090	1,268	178
Brick, tile and sewer pipe	23	278	56	600	544
Brooms, brushes, etc.	19	189	145	235	90
Burial cases, casket, coffins, etc.	4	300	297	314	17
Cement, lime, plaster, etc.	12	296	183	435	252
Chairs	13	2,775	2,689	2,849	160
Chemical preparations	13	140	126	168	42
Cigars, snuff and tobacco	54	895	745	997	252
Clothing	26	1,736	1,610	1,866	256
Coal and wood	23	1,463	1,045	2,069	1,024
Confectioneries, crackers, etc.	12	689	667	742	75
Cooking and heating apparatus	24	1,157	937	1,309	372
Cooperage	21	653	585	724	139
Cotton and linen goods	5	552	507	629	122
Electrical and gas apparatus and supplies	21	1,041	969	1,141	172

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED
BY INDUSTRIES—Continued.

The terms "Period of Employment of Smallest Number" and "Period of Employment of Greatest Number," as used in the following table, are meant those times, *as regards aggregate number of persons employed*, when the smallest or greatest number, respectively, was employed. Wage earners only are considered: officers, clerks or other salaried persons are not included.

AGGREGATES—1896.

INDUSTRIES.	No. of establishments.	Aggregate average number of persons employed.	AGGREGATE OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF—		Excess greatest over smallest number.
			Smallest number.	Greatest number.	
Electrical and gas lighting, power and street railways	49	1,861	1,624	2,029	405
Fancy articles	8	112	86	171	85
Flour and feed	86	1,095	1,025	1,144	119
Food preparations	31	1,981	1,525	3,887	2,362
Furniture	42	2,710	2,317	3,020	703
Furs, gloves and mittens	11	369	292	454	162
Grain and warehouse men	12	150	132	269	137
Iron goods (malleable).....	25	3,315	3,069	3,654	585
Iron (pig)	2	116	85	191	106
Knit goods	15	1,605	1,414	1,716	302
Lager beer	71	3,133	3,032	3,244	212
Laundries	75	761	645	883	238
Leather	33	4,340	4,075	4,872	797
Lithographing and engraving	7	437	432	462	30
Lumber, lath and shingles	168	11,542	6,313	17,900	11,587
Malt	20	506	368	584	216
Machines and machinery	86	4,317	3,792	4,921	1,129
Mixed textiles	9	368	341	432	141
Office and saloon fixtures, etc.....	15	630	486	785	299
Paints, oils and crude chemicals.....	7	128	88	138	50
Paper and pulp.....	34	3,117	2,774	3,667	893
Printers' supplies	4	186	173	196	23
Railway equipment	20	5,246	4,886	6,500	1,614
Saddlery, harness, etc.....	9	159	131	201	70
Sash, doors, blinds and mouldings.....	73	3,207	2,716	3,714	998
Sheet metal goods	26	1,561	1,467	1,982	515
Ship and boat building.....	6	960	385	1,566	1,181
Soap, lye, potash, etc.....	9	133	126	147	21
Staves and heading	21	442	316	665	349
Stone (granite, marble, etc).....	10	173	103	245	142
Straw goods	5	606	408	849	441
Toys and games.....	5	248	180	337	157
Trunks, valises, etc.....	9	587	478	659	181
Veneer	9	294	228	408	180
Wagons, carriages and sleighs.....	53	2,084	1,567	2,455	888
Woodenware	11	1,611	1,587	1,692	105
Woolen and worsted goods	17	883	658	1,064	396
Miscellaneous	13	388	379	414	35
All industries	1,499	80,061	65,569	99,546	33,977

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED
—BY INDUSTRIES.

The terms "Period of Employment of Smallest Number" and "Period of Employment of Greatest Number," as used in the following table are meant those times, as regards *aggregate number of persons employed*, when the smallest or greatest number, respectively, was employed. Wage earners only are considered; officers, clerks or other salaried persons are not included.

AGGREGATES—1897.

INDUSTRIES.	No. of estab-lish-ments.	Aggre-gate av-erage number of per-sons em-ployed.	AGGREGATE OF PERSONS EMPLOYED AT PERIODS OF EM-PLOYMENT OF—		Excess great-est over small-est num-ber.
			Smallest number.	Greatest number.	
Agricultural implements	31	1,866	1,568	2,386	818
Artisans' tools and hardware specialties	10	443	214	801	587
Beverages (not spirituous, soft drinks)	18	204	180	241	81
Bicycles, tricycles, etc.	7	658	301	962	661
Boots and shoes	24	2,299	2,186	2,457	271
Boxes (wooden and paper)	28	1,336	1,180	1,554	374
Brick, tile and sewer pipe	23	280	56	632	576
Brooms, brushes, etc.	19	207	153	298	135
Burial cases, caskets and coffins	4	313	306	331	25
Cement, lime, plaster, etc.	12	328	193	553	360
Chairs	13	3,091	2,992	3,319	327
Chemical preparations	13	146	136	166	30
Cigars, snuff and tobacco	54	965	927	995	68
Clothing	25	1,620	1,572	1,798	226
Coal and wood	28	1,759	1,280	2,719	1,439
Confectioneries, crackers, etc.	12	734	635	891	256
Cooking and heating apparatus	24	1,247	1,137	1,578	441
Cooperage	21	627	543	773	230
Cotton and linen goods	5	479	274	600	326
Electrical and gas apparatus and sup-plies	21	1,045	998	1,179	181
Electrical and gas lighting, power and street railways	49	1,932	1,764	2,207	443
Fancy articles	8	128	87	177	90
Flour and feed	86	1,132	1,108	1,205	97
Food preparations	31	2,118	1,517	4,317	2,800
Furniture	42	2,441	2,205	2,838	633
Furs, gloves and mittens	11	284	226	335	109
Grain and warehouse men	12	181	151	281	130
Iron goods (malleable)	25	3,350	2,594	4,064	1,490
Iron (pig)	2	144	89	220	131
Knit goods	15	1,751	1,366	1,953	587
Lager beer	71	3,108	2,984	3,352	368
Laudries	75	783	700	874	174
Leather	33	4,754	4,201	5,329	1,128
Lithographing and engraving	7	440	431	454	23
Lumber, lath and shingles	168	11,827	5,195	19,708	14,511
Malt	20	514	363	590	227
Machines and machinery	86	4,486	4,201	5,256	1,055
Mixed textiles	9	348	317	428	111
Office and saloon fixtures, etc.	15	558	422	713	291
Paints, oils and crude chemicals	7	139	126	164	38
Paper and pulp	34	3,152	2,893	3,716	823

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED
BY INDUSTRIES—Continued.

The terms "Period of Employment of Smallest Number" and "Period of Employment of Greatest Number," as used in the following table are meant those times, *as regards aggregate number of persons employed*, when the smallest or greatest number, respectively, was employed. Wage earners only are considered; officers, clerks or other salaried persons are not included.

AGGREGATES—1897.

INDUSTRIES.	No. of establishments.	Aggregate average number of persons employed.	AGGREGATE OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF—		Excess greatest over smallest number.
			Smallest number.	Greatest number.	
Printers' supplies	4	190	187	199	12
Railway equipment	20	9,933	9,483	10,416	933
Saddlery, harness, etc.	9	215	193	264	71
Sash, doors, blinds and mouldings	73	3,507	2,788	4,015	1,227
Sheet metal goods	26	2,042	1,833	2,239	406
Ship building	6	622	310	939	629
Soap, lye and potash	9	165	152	181	29
Staves and heading	21	521	375	750	405
Stone (granite, marble, etc.)	10	182	116	246	130
Straw goods	5	555	343	817	474
Toys and games	5	253	186	364	178
Trunks, valises, etc.	9	635	514	710	196
Veneer	9	385	331	494	163
Wagons, carriages and sleighs	53	2,370	2,193	2,641	448
Woodenware	11	1,324	1,172	1,470	298
Woolen and worsted goods	17	1,048	907	1,223	316
Miscellaneous	13	380	373	419	46
All industries	1,499	87,534	71,207	109,839	38,632

The above two tables show for their respective years, by industries, the average number of persons employed, the greatest and smallest number of persons employed, and the excess of the greatest over the smallest number of persons.

In 1896 the aggregate average persons employed was 80,051, in 1897, 87,534. Of the number at the smallest and greatest period of employment the relations were 65,569 to 71,207 and 99,546 to 109,839. The excess of the greatest over the smallest number was 33,977 in the former and 38,632 in the latter year. The excess of the number employed in 1897, at the different periods, thus varied from 4,655 to 10,293.

In these two presentations as in the one which relates to

"classified wages" 58 industries or 1,499 establishments are included.

All industries.—Under this main head is presented in the nine tables the aggregates or summaries for all industries for 1896 and 1897, arranged in such way as also to show the increase or decrease, between the two years, in the various elements.

Partners and stockholders.—This table gives for each year the respective number of partners and stockholders classified as to sex, together with the increase or decrease in each case and the percentage of same. For 1896 and 1897 the partners numbered 1,134 and 1,325, and the stockholders 7,214 and 7,716 respectively. There was thus in 1897 over the preceding year an increase of 191 in the number of partners and 502 in the number of stockholders. This increase is equivalent to 16.84 per cent. in the former and 6.95 per cent. in the latter case.

Persons employed.—This table gives the average, smallest, and greatest, the excess of the greatest over the smallest number of persons employed in 1896 and 1897 and increase in each case in 1897.

The average number increased from 80,051 to 87,534, or 9.34 per cent.

The smallest number increased from 65,569 to 71,207, or 8.59 per cent.

The greatest number increased from 99,546 to 109,839, or 10.34 per cent.

The excess of the greatest number over the smallest increased from 33,977 to 38,632, or 13.70 per cent.

Capital invested.—This table shows that the capital used in production increased from \$175,905,124 in 1896 to \$189,760,667 in 1897, or 7.87 per cent.

Stock used.—The table under this head shows the cost of the stock or material including supplies of all kinds used in production increased from \$87,027,266 in 1896 to \$98,130,070 in 1897, or 12.76 per cent.

Goods made.—The presentation under this head gives the increase in the value of the goods made or work done from \$155,152,906 in 1896 to \$169,946,673 in 1897, or 9.53 per cent.

Persons employed by months.—The table gives the average number of persons, classified as to sex, employed each month in

1896 and 1897. In this case calculations of the increase in 1897 have not been made but a glance at the table shows that it is quite large.

Wages and earnings.—This presentation shows that the amount paid in wages increased from \$31,749,822 in 1896 to \$36,583,044 in 1897, or 15.22 per cent., and that the average yearly earnings to each worker increased from \$386.63 in 1896 to \$416.79 in 1897, or 7.31 per cent.

Classified weekly wages.—This table shows for 1896 and 1897 the number of persons, classified as to males 18 years of age and over and under 18 years of age, and females 18 years and over and under 18 years, in all industries receiving classified wages. The number of persons and wages thus reported is that which obtained at the time the returns were filled out, or at about the same date each year. While the relative increase and decrease in 1897 are not given the differences between the two years are very marked. It may also be mentioned that in the above years the system of reporting wages was changed from a daily to a weekly scale.

Proportion of business done.—The presentation under this head gives the proportion of business done and days in operation in 1896 and 1897, with the increase for the latter year. In these calculations the full productive capacity of the establishment was considered as 100. Thus, if an establishment turned out goods equal to about three-fourths of its capacity, the proportion of business done would be considered as 75 per cent.

The average proportion of business done by the 1,499 establishments included was 67.53 per cent. in 1896 and 71.80 per cent. in 1897, or an increase in the latter year of 3.36 per cent.

The average number of days in operation was 263.40 in 1896 and 270.81 in 1897, or an increase of 2.81 per cent.

SYNOPSIS OF THE REPORTS OF THIS BUREAU. 193

ALL INDUSTRIES — 1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (—) IN 1897.	
			No.	Per cent.
Number of establishments.....	1,245	1,245	.....	.....
Number of private firms.....	619	625	+ 6	+ 0.96
Number of partners.....	1,134	1,325	+ 191	+ 16.84
Males.....	1,104	1,262	+ 158	+ 14.
Females.....	30	63	+ 33	+ 110.
Number of corporations.....	614	608	— 6	— 0.97
Number of stockholders.....	7,214	7,716	+ 502	+ 6.95
Males.....	6,417	6,769	+ 352	+ 5.48
Females.....	797	947	+ 150	+ 18.82
Aggregates: partners and stockholders	8,348	9,041	+ 693	+ 13.18

Persons employed.

Average number.....	80,051	87,534	+ 7,483	+ 9.34
Smallest number.....	65,569	71,207	+ 5,638	+ 8.59
Greatest number.....	99,546	109,839	+ 10,293	+ 10.34
Excess of greatest over smallest	33,977	38,632	+ 4,655	+ 13.70

Capital invested.

	1896.	1897.	INCREASE (+) OR DECREASE (—) IN 1897.	
			Amount.	Percentages.
Total amount of capital invested.....	\$175,905,124	\$189,760,669	+ \$13,855,545	+ 7.87

Stock used — aggregate values.

Total value of stock used.....	\$87,027,266	\$98,130,070	+ \$11,102,804	+ 12.76
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Goods made — aggregate values.

Total value of goods made or work done.....	\$156,152,906	\$169,946,673	+ \$14,793,767	+ 9.53
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Persons employed — by months.

Months.	1896.			1897.		
	Male.	Fe- male.	Total.	Male.	Fe- male.	Total..
January.....	65,965	9,049	75,014	66,992	8,554	75,546
February.....	67,895	9,179	77,074	68,967	8,794	77,760
March.....	69,655	9,579	79,234	71,252	9,246	80,498
April.....	74,509	9,965	84,465	77,959	9,524	87,483
May.....	77,872	9,569	87,441	82,573	9,749	92,322
June.....	78,332	9,579	87,911	83,232	9,500	92,732
July.....	76,993	9,393	86,386	82,315	10,015	92,330
August.....	74,191	9,354	83,545	82,131	10,436	92,567
September.....	70,254	9,089	79,353	82,383	10,295	92,678
October.....	69,226	9,116	77,451	83,147	9,826	92,973
November.....	69,808	8,933	74,739	72,637	9,561	82,198
December.....	62,174	8,626	70,800	73,805	9,454	83,259

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages.....	\$31,749 822	\$36,583,044	+	15.22
Average yearly earnings.....	\$396.63	\$416.79	+	7.31

Classified weekly earnings.

Classification of weekly earnings.	1893.						1897.					
	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.		Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	
\$25.00 per week and over...	1,030	.....	.....	.....	1,030	861	.....	.....	.....	.....	861	.....
20.00 but under 25.00.....	1,533	.....	.....	.....	1,533	1,674	.....	.....	.....	.....	1,674	.....
18.00 but under 20.00.....	1,496	.....	.....	.....	1,496	1,632	.....	.....	.....	.....	1,632	.....
15.00 but under 18.00.....	3,990	.....	.....	.....	3,990	3,860	.....	.....	.....	.....	3,860	.....
13.00 but under 15.00.....	3,924	.....	.....	.....	3,924	4,194	.....	.....	.....	.....	4,194	.....
12.00 but under 13.00.....	5,819	1	.....	.....	5,820	7,156	.....	.....	.....	.....	7,156	.....
11.00 but under 12.00.....	2,823	36	.....	.....	2,859	3,193	78	.....	.....	.....	3,271	.....
10.00 but under 11.00.....	5,948	63	.....	.....	6,013	6,117	74	.....	.....	.....	6,191	.....
9.00 but under 10.00.....	17,292	148	.....	.....	17,438	14,357	118	.....	.....	.....	14,475	.....
8.00 but under 9.00.....	9,380	129	.....	.....	9,509	10,321	202	.....	.....	.....	10,523	.....
7.00 but under 8.00.....	14,007	288	65	.....	14,360	14,683	307	133	61	15,124	.....	.....
6.00 but under 7.00.....	8,526	763	212	23	9,524	7,878	738	298	30	8,909	.....	.....
5.50 but under 6.00.....	1,356	598	206	42	2,203	1,515	386	215	11	2,127	.....	.....
5.00 but under 5.50.....	1,190	1,460	324	71	3,045	1,244	821	304	24	2,369	.....	.....
4.50 but under 5.00.....	1,136	1,305	873	145	3,459	1,135	1,471	1,474	164	4,244	.....	.....
4.00 but under 4.50.....	603	866	746	161	2,376	477	1,145	1,231	278	3,131	.....	.....
3.50 but under 4.00.....	477	1,112	889	493	2,962	223	401	1,394	433	2,451	.....	.....
3.00 but under 3.50.....	776	875	1,230	530	3,411	135	823	2,051	772	3,781	.....	.....
2.50 but under 3.00.....	136	282	764	545	1,727	.....	262	1,105	626	1,993	.....	.....
2.00 but under 2.50.....	73	137	389	326	925	.....	201	676	403	1,280	.....	.....
1.50 but under 2.00.....	12	34	68	102	216	.....	54	97	206	357	.....	.....
Under \$1.50.....	.....	1	6	38	45	.....	9	3	14	86	.....	.....
Totals.....	31,527	8,098	5,766	2,476	97,867	80,605	7,090	8,976	3,082	99,733	.....	.....

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
Average proportion of business done.....	69.13	71.80	+	2.27
Average number of days in operation.....	263.46	270.81	+	2.81

COURSE OF WAGES IN MANUFACTURING INDUSTRIES.

The purpose of the following presentations under the above head is to show, by industries, the number and percentage of persons, for each year included, receiving classified daily wages in manufacturing in this state.

The material for these presentations was obtained from the returns of the manufacturers to this bureau as presented in its various reports. Thus the data for 1888, 1891 and 1893, respectively, were compiled from those in the fourth, fifth, and sixth reports, the data for 1894 and 1895 from the seventh report, and the data for 1896 and 1897 from the eighth report.

In all cases the manufacturers reported immediately after the close of the year's business. Up to and including 1894 the schedules used were practically identical, inquiring only as to the number employed at each rate, and the total amount paid in wages during the preceding year. For the last three years, however, the schedules have covered, besides the wage scale, the capital invested or used, the cost of raw material and supplies, the amount paid in wages, the value of the annual products and other facts relating to the business done. In the returns for 1896 and 1897 the weekly rate of wages, instead of the daily, as for the preceding years, was given, but for the sake of comparisons the weekly rate for these years has been made to conform to the rate for the other years. All returns before used were also carefully edited and verified, and the classifications as to industries is the same throughout. With a few and unimportant exceptions this data has therefore been collected and treated on a uniform plan, and there is every reason to believe that although there are some sharp and perhaps unaccountable fluctuations between the different years, the results as shown in the tables represent the actual condition at the time.

The returns or material are, as the tables show, classified under twenty-five different heads. This classification was observed throughout the period, and as it was thought advisable,

in these presentations, to have as few industry divisions as possible, each head really embraces several allied industries. In making these combinations, however, due regard was given the nature and similarities of each industry and only those placed together which seemed to warrant it. In order to avoid any misunderstanding as to the nature of these combinations the following explanations are made:

Agricultural implements.—Includes manufacturers of all kinds of machinery and tools used upon the farm.

Boots and shoes.—Includes manufacturers of all kinds of boots and shoes or parts of such, as well as findings, etc.

Boxes, etc.—Embraces boxes of all kinds, such as packing, cigar, paper, beehives and sections.

Beer, etc.—Includes lager beer and malting establishments.

Brick, etc.—Includes establishments making brick of all kinds, drain tile, sewer pipes, plaster and furnishers of coal and wood or fuel.

Chairs, etc.—Includes chair factories, whether making finished chairs or only parts of same.

Cigars, etc.—Includes cigar and tobacco factories of all kinds.

Clothing, etc.—Includes manufacturers of cloaks and clothing of all kinds, shirts, hats and caps.

Light, water, etc.—Includes electric and gas light plants, water works and street railway companies.

Flour, etc.—Includes flour, feed or grist mills.

Food, etc.—Includes beef and pork packing, coffee and spice mills, vinegar, yeast and provisions, etc.

Furniture.—Includes furniture, mattresses, beddings, refrigerators, cribs, etc.

Iron goods, etc.—Includes iron works, bridge works, rolling mills and tack and nail factories.

Knit goods.—Includes knit goods of all kinds.

Leather.—Includes leather, tanners and curriers.

Lumber, etc.—Includes lumber, lath and shingle mills. Also excelsior.

Machinery, etc.—Includes machinery, foundries, hardware specialties and tools, heating and cooking apparatus, boiler works, windmills, pumps, etc.

Paper and pulp.—Includes paper and pulp mills of all kinds.

Railway equipment.—Includes railway shops only.

Sash, doors, etc.—Includes sash, door and blinds factories.

Sheet metal goods.—Includes tinware, sheet iron, galvanized iron, etc.

Wagons, etc.—Includes wagons, carriages and sleighs, hubs and spoke plants.

Woodenware.—Includes woodenware factories of all kinds.

Woolens, etc.—Includes woolen and worsted mills.

Other industries.—Includes all industries which could not be classified under any of the above heads.

The presentation consists of eight tables and ten diagrams, or one, in each case, for each year covered and one table and three diagrams illustrating the whole period.

Each one of the seven tables show, by industries for the year covered, the number of persons and their percentage of the whole employed at each class of daily wages. These facts for each year are also more fully illustrated by the accompanying diagram.

The eighth table in order, or the one for "All industries," shows, for each of the seven years, the total number and percentage of persons employed at each classified daily rate, together with aggregate number of persons returned.

The second section of this table gives for each year the number and percentage of persons receiving the wages given opposite in the margin, or more than this sum.

The third section of the table for "All industries" gives the average number and percentage of persons for each of the three periods, 1888 to 1893, inclusive; 1894 to 1896, inclusive, and 1894 to 1897, inclusive, also the total and percentage for 1897, which received the rate of wages per day given in the margin.

The first section of this table, VIII, is illustrated by diagram VIII, covering four pages. This diagram gives for each year the proportion, number and percentage reported at each classified daily rate of wages.

The second and third sections are illustrated by diagrams IX and X, respectively. These two diagrams may be said to supplement diagram VIII. Together the three diagrams mentioned indicate plainly the course of wages in the manufacturing industries in this state from 1888 to 1897, inclusive.

TABLE I.—*Showing by industries, the number of persons and the manufacturing establish-*

Industries.	Running No.	\$4.00 and over.	\$3.50 but under \$4.00.	\$3.00 but under \$3.50.	\$2.50 but under \$3.00.	\$2.00 but under \$2.50.	\$1.50 but under \$2.00.	\$1.25 but under \$1.50.	\$1.00 but under \$1.25.	75 cents but under \$1.00.	50 cents but under 75.	Under 50 cents.	Total.
Agricultural imp., etc..	1	41	43	77	210	436	816	756	245	134	131	12	2,901
Beer and malt.....	2	91	25	45	249	756	819	402	158	165	193	158	3,061
Boots and shoes.....	3	59	16	85	121	158	439	245	240	226	262	117	1,968
Boxes, etc.....	4	2	2	3	11	48	74	67	34	113	164	74	562
Brick, etc.....	5	5	1	11	10	35	289	403	199	47	42	15	1,062
Chairs, etc.....	6	13	6	19	35	90	230	627	663	260	326	195	2,369
Cigars, etc.....	7	25	14	34	65	213	219	65	79	68	57	93	967
Clothing, etc.....	8	60	15	57	32	58	153	166	195	326	289	44	1,395
Light, water, etc.....	9	12	9	12	58	79	163	53	11	4	4	1	406
Flour, etc.....	10	41	15	37	71	114	273	198	109	17	10	.....	868
Food, etc.....	11	16	10	17	26	181	326	197	67	37	28	24	579
Furniture.....	12	43	21	77	205	420	750	701	659	343	327	133	3,679
Iron goods, etc.....	13	133	45	110	153	326	652	437	221	89	89	12	2,267
Knit goods.....	14	6	4	14	18	12	30	17	110	318	461	532	1,512
Leather, etc.....	15	40	39	61	84	113	1,117	635	221	70	47	17	2,444
Lumber, etc.....	16	448	317	419	808	1,997	8,760	7,832	2,149	563	396	99	23,781
Machinery, etc.....	17	189	87	251	718	1,285	1,391	1,132	428	321	428	155	6,335
Paper and pulp.....	18	28	35	106	49	100	445	323	157	537	43	5	1,626
Railway shops.....	19	44	31	99	412	702	1,290	789	224	56	3	.....	3,653
Sash, doors, etc.....	20	13	14	74	117	514	1,072	781	429	257	317	153	3,776
Sheet metal goods.....	21	14	7	11	21	56	54	52	67	119	228	169	797
Wagons, etc.....	22	21	22	41	112	416	312	708	344	135	206	10	2,633
Woodenware.....	23	15	3	4	10	71	212	367	285	169	110	9	1,235
Woolens, etc.....	24	18	9	19	22	47	68	119	156	137	238	90	923
Total.....	25	1,387	798	1,683	3,617	8,131	20,452	17,077	7,450	4,515	4,291	2,167	71,563
Other industries.....	26	320	175	304	653	1,111	996	1,563	1,028	891	1,291	585	8,947
All industries.....	27	1,707	968	1,987	4,300	9,242	21,448	18,640	8,478	5,406	5,582	2,752	80,510

percentage of same reported employed at classified daily wages, in
ments in Wisconsin in 1888.

Running No.	\$4.00 and over.	\$3.50 but under \$4.00.	\$3.00 but under \$3.50.	\$2.50 but under \$3.00.	\$2.00 but under \$2.50.	\$1.50 but under \$2.00.	\$1.25 but under \$1.50.	\$1.00 but under \$1.25.	75 cents but under \$1.00.	50 cents but under 75.	Under 50 cents.	Total percentage.
1	1.42	1.49	2.66	7.24	15.02	28.12	26.03	8.44	4.62	4.52	.41	100.00
2	2.97	.82	1.43	8.14	21.70	26.76	13.14	5.17	5.36	6.30	5.16	100.00
3	3.00	.81	4.32	6.15	8.03	22.31	12.44	12.20	11.48	13.32	5.94	100.00
4	.35	.35	.57	1.83	8.11	12.50	11.31	5.76	19.07	27.72	12.40	100.00
5	.47	.09	1.03	.91	3.30	27.21	38.42	18.74	4.43	3.96	1.41	100.00
6	.76	.25	.32	1.44	3.80	9.71	26.49	27.99	10.97	9.51	8.23	100.00
7	2.67	1.49	3.64	6.93	23.28	23.34	6.94	8.44	7.26	6.00	9.91	100.00
8	4.30	1.08	4.09	2.29	4.16	10.97	11.89	13.98	28.37	20.72	3.15	100.00
9	2.98	2.20	2.98	14.40	19.20	40.24	13.10	2.73	.98	.98	.21	100.00
10	4.64	1.66	4.19	8.03	12.89	30.83	22.37	12.32	1.92	1.13	.....	100.00
11	1.82	1.14	1.85	3.14	14.70	37.07	22.31	7.60	4.04	3.23	3.10	100.00
12	1.17	.57	2.09	5.57	11.42	20.39	19.06	17.91	9.32	8.83	3.62	100.00
13	5.87	1.99	4.35	6.75	14.39	28.76	19.28	9.75	3.92	3.92	.52	100.00
14	.31	.26	.91	1.17	.78	1.93	1.12	7.12	20.63	29.93	35.82	100.00
15	1.63	1.61	2.40	3.25	4.62	45.71	26.81	9.00	2.51	1.71	.69	100.00
16	1.89	1.34	1.74	3.96	8.39	36.84	32.94	9.07	2.33	1.63	.42	100.00
17	2.98	1.38	3.97	11.34	19.49	21.91	17.87	6.76	5.06	6.74	2.45	100.00
18	1.53	1.92	5.81	2.63	5.47	24.23	17.67	8.53	29.38	2.46	.27	100.00
19	1.20	.93	2.71	11.26	19.22	35.32	21.59	6.13	1.53	.09	.....	100.00
20	.48	.38	1.97	3.08	13.61	28.65	20.42	11.36	6.82	8.39	4.84	100.00
21	1.75	.92	1.42	2.66	6.92	6.82	6.48	8.42	14.92	28.38	21.16	100.00
22	.71	.78	1.45	3.94	14.71	28.71	25.03	12.17	4.80	7.32	.35	100.00
23	1.20	.23	.32	.60	5.66	16.88	29.27	22.70	13.46	8.76	.72	100.00
24	1.95	.96	2.06	2.38	5.09	7.36	12.89	16.90	14.83	25.79	9.75	100.00
25	1.91	1.11	2.35	5.05	11.36	28.53	23.86	10.41	6.31	6.00	3.03	100.00
26	3.57	1.95	3.40	7.64	12.42	11.13	17.47	11.49	9.96	14.43	6.54	100.00
27	2.12	1.20	2.47	5.34	11.48	26.64	23.16	10.53	6.71	6.93	3.42	100.00

TABLE NO. II.—*Showing, by industries, the number of persons and the manufacturing establish*

Industries.	Running No.	\$4.00 and over.	\$3.50 but under \$4.00.	\$3.00 but under \$3.50.	\$2.50 but under \$3.00.	\$2.00 but under \$2.50.	\$1.50 but under \$2.00.	\$1.25 but under \$1.50.	\$1.00 but under \$1.25.	75 cents but under \$1.00.	50 cents but under 75.	Under 50 cents.	Total.
Agricultural impts.	1	138	42	77	386	496	934	771	296	152	73	8	3,383
Beer and malt.....	2	105	50	93	259	940	1,146	359	284	103	158	110	3,807
Boots and shoes	3	53	47	106	189	199	445	294	376	263	731	135	2,559
Boxes, etc	4	9	2	8	19	51	168	170	164	90	212	108	1,008
Brick, etc.....	5	68	13	47	35	390	1,010	491	70	46	31	17	2,215
Chairs, etc.....	6	49	20	45	73	172	393	1,034	839	269	327	110	3,391
Cigars, etc.....	7	33	27	43	97	197	238	233	172	88	177	80	1,385
Clothing, etc.....	8	68	22	62	55	99	252	196	231	351	183	85	1,664
Light, water, etc.....	9	12	15	27	64	112	310	39	21	5	.....	43	646
Flour, etc.....	10	41	27	51	170	195	445	256	89	41	11	3	1,329
Food, etc.....	11	39	18	19	66	156	477	248	111	121	70	16	1,340
Furniture.....	12	44	24	107	137	245	530	789	958	291	409	142	3,678
Iron goods, etc	13	235	58	117	176	464	1,007	583	381	76	53	4	3,159
Knit goods.....	14	5	13	13	9	17	32	21	102	268	367	732	1,579
Leather, etc	15	40	103	139	266	373	1,612	840	179	92	90	12	3,731
Lumber, etc	16	473	423	603	803	2,231	10,291	6,911	3,206	771	460	92	26,319
Machinery, etc.....	17	148	109	262	877	753	1,311	860	411	294	206	39	5,330
Paper and pulp.....	18	22	20	95	95	164	754	473	178	514	100	2	2,417
Railway shops.....	19	50	239	180	626	1,246	2,007	1,310	77	43	18	.....	5,796
Sash, doors, etc.....	20	23	37	64	230	517	927	692	266	216	256	47	3,273
Sheet metal goods.....	21	22	12	19	42	74	99	57	76	137	199	249	966
Wagons, etc	22	21	24	77	235	459	1,188	646	228	180	134	2	3,144
Woodenware.....	23	8	.....	6	15	48	72	290	240	97	21	15	812
Woolens, etc.....	24	23	9	23	25	75	92	171	188	154	312	29	1,101
Total.....	25	1,732	1,359	2,281	4,961	9,725	25,740	17,736	9,213	4,651	4,660	2,100	84,146
Other industries.....	26	499	208	462	1,537	1,570	3,113	1,312	1,103	1,482	1,269	778	13,339
All industries.....	27	2,231	1,567	2,743	6,498	11,295	28,853	19,048	10,316	6,133	5,929	2,878	97,485

*percentage of same, reported employed, at classified daily wages, in
ments in Wisconsin in 1891.*

Running No.	\$1.00 and over.	\$3.50 but under \$4.00.	\$3.00 but under \$3.50.	\$2.50 but under \$3.00.	\$2.00 but under \$2.50.	\$1.50 but under \$2.00.	\$1.25 but under \$1.50.	\$1.00 but under \$1.25.	75 cents but under \$1.00.	50 cents but under 75.	Under 50 cents.	Total percentages.
1	4.10	1.23	2.29	11.43	14.80	27.76	22.92	8.47	4.52	2.18	0.23	100.00
2	2.91	1.38	2.53	7.19	26.06	31.77	9.96	7.37	2.86	4.38	3.04	100.00
3	1.83	1.64	3.71	6.61	6.96	15.60	10.28	13.16	9.20	23.57	5.42	100.00
4	0.59	0.19	0.29	1.89	5.68	16.71	16.91	16.38	9.70	21.11	10.25	100.00
5	3.06	0.58	2.12	1.58	17.59	45.54	22.14	3.15	2.09	1.39	0.76	100.00
6	1.42	0.59	1.34	2.13	5.07	11.59	30.46	25.58	8.80	9.62	3.38	100.00
7	2.39	1.92	3.09	7.24	14.12	15.97	13.83	12.10	6.44	13.90	5.95	100.00
8	4.10	1.32	3.74	3.32	5.97	15.21	11.95	17.02	21.19	11.05	5.13	100.00
9	1.85	2.31	4.17	9.87	17.29	47.84	6.02	3.25	0.77	.....	6.63	100.00
10	3.09	2.12	3.98	13.22	14.64	34.71	18.51	6.54	3.09	0.05	0.02	100.00
11	2.88	1.34	1.41	4.88	11.55	35.31	18.35	8.21	8.96	5.92	1.19	100.00
12	1.19	0.54	2.93	3.84	6.43	14.21	22.60	25.40	7.90	11.15	3.81	100.00
13	7.71	1.64	3.25	5.42	12.12	33.21	19.40	12.71	2.81	1.72	0.01	100.00
14	0.31	0.82	0.82	0.57	1.07	2.04	1.34	6.46	16.97	23.24	46.36	100.00
15	1.06	2.87	3.73	7.09	9.97	42.97	22.39	4.77	2.44	2.39	0.32	100.00
16	1.80	1.60	2.33	3.05	8.66	39.10	26.26	12.18	2.93	1.75	0.34	100.00
17	2.77	2.04	4.91	16.45	14.13	24.59	16.13	7.71	5.53	4.99	0.75	100.00
18	0.91	0.83	3.91	3.94	6.78	31.19	19.55	7.36	21.26	4.16	0.08	100.00
19	0.87	4.12	3.10	10.80	21.50	34.63	22.60	1.33	0.74	0.31	.....	100.00
20	0.70	1.12	1.95	7.33	15.76	28.00	21.12	8.12	6.60	7.87	1.43	100.00
21	2.23	1.22	4.93	4.25	7.50	10.04	5.79	7.72	13.89	20.18	25.25	100.00
22	0.66	0.76	2.48	7.47	14.61	37.78	20.54	7.25	4.13	4.26	0.06	100.00
23	0.96	.....	0.74	1.84	5.90	8.86	35.74	29.53	11.99	2.58	1.84	100.00
24	2.06	0.81	2.08	2.26	6.81	8.35	15.53	17.06	13.98	23.41	2.63	100.00
25	2.06	1.61	2.71	5.88	11.57	30.59	21.07	10.95	5.53	5.54	2.49	100.00
26	3.71	1.56	3.46	11.45	11.78	23.35	9.85	8.27	11.18	9.52	5.84	100.00
27	2.29	1.60	2.82	6.66	11.59	29.60	19.54	10.58	6.29	6.08	2.95	100.00

TABLE III.—*Showing, by industries, the number of persons and the manufacturing establish-*

Industries.	Running No.	\$4.00 and over.	\$3.50 but under \$4.00.	\$3.00 but under \$3.50.	\$2.50 but under \$3.00.	\$2.00 but under \$2.50.	\$1.50 but under \$2.00.	\$1.25 but under \$1.50.	\$1.00 but under \$1.25.	75 cents but under \$1.00.	50 cents but under 75.	Under 50 cents.	Total.
Agricultural imp.	1	30	58	64	205	498	670	705	249	134	77	2	2,682
Beer and malt	2	129	37	71	346	938	955	352	337	155	405	5	3,730
Boots and shoes	3	56	47	97	283	547	406	476	236	322	813	174	3,457
Boxes, etc	4	11	1	1	20	42	207	121	139	154	216	71	983
Brick, etc	5	190	15	19	67	396	1,040	758	260	197	72	16	3,030
Chairs, etc	6	30	13	29	28	87	307	819	812	288	284	99	2,796
Cigars, etc	7	23	33	52	101	223	223	113	105	82	164	93	1,217
Clothing, etc	8	55	26	46	43	89	142	326	253	334	215	114	1,643
Light, water, etc]..	9	30	10	27	38	170	1,323	106	30	9	49	.....	1,842
Flour and feed	10	81	40	89	170	245	828	859	108	63	18	10	2,011
Food, etc	11	69	33	28	37	125	471	212	107	68	111	17	1,273
Furniture	12	48	37	91	155	342	432	853	789	287	339	106	3,554
Iron goods, etc	13	94	54	105	116	571	582	488	203	131	56	3	2,403
Knit goods	14	21	8	12	28	27	48	60	119	311	350	318	1,301
Leather, etc	15	25	18	55	188	350	1,359	1,243	383	175	284	2	4,082
Lumber, etc	16	505	275	392	859	1,849	8,755	6,256	2,361	458	188	24	21,942
Machinery, etc	17	187	160	284	885	1,636	1,510	1,063	470	291	304	65	6,555
Paper and pulp	18	38	10	131	99	179	1,011	715	330	573	130	26	3,244
Railway shops	19	52	269	189	658	1,273	2,207	1,305	101	55	13	4	6,131
Sash, doors, etc	20	29	37	85	249	645	1,105	934	588	340	310	100	4,422
Sheet metal goods	21	29	22	23	65	101	131	92	102	190	245	137	1,137
Wagons, etc	22	17	26	60	206	583	1,011	703	296	177	105	5	3,138
Woodenware	23	8	4	18	56	79	107	200	359	208	130	25	1,194
Woolens, etc	24	46	51	34	58	117	163	265	274	500	539	381	2,473
Total	25	1,808	1,234	2,002	5,007	11,112	25,023	18,534	8,961	5,504	5,522	1,796	56,573
Other industries	26	452	229	459	1,163	1,920	3,733	2,671	2,045	1,458	1,506	656	16,236
All industries	27	2,260	1,513	2,461	6,170	13,032	28,756	21,205	11,006	6,962	7,028	2,452	102,809

*percentage of same, reported employed, at classified daily wages in
ments in Wisconsin in 1893.*

Running No.	\$4.00 and over.	\$4.50 but under \$4.00	\$5.00 but under \$4.50	\$5.50 but under \$5.00	\$6.00 but under \$5.50	\$6.50 but under \$6.00	\$7.00 but under \$6.50	\$7.50 but under \$7.00	\$8.00 but under \$7.50	75 cents but under \$1.00	50 cents but under 75.	Under 50 cents.	Total.
1	1.13	2.19	2.38	7.74	18.79	25.28	26.60	7.89	5.06	2.89	0.06	100.00	
2	3.43	0.99	1.90	9.27	25.13	25.59	9.48	9.08	4.15	10.85	0.23	100.00	
3	1.62	1.33	2.81	8.19	15.82	11.74	13.77	6.83	9.31	23.52	5.08	100.00	
4	1.11	0.10	0.10	2.04	4.03	20.79	12.43	14.22	15.90	21.90	7.32	100.00	
5	6.27	0.49	0.63	2.22	13.09	34.32	25.02	8.58	6.52	2.37	0.45	100.00	
6	1.07	0.46	1.03	1.03	3.11	10.97	20.28	29.08	10.29	10.15	3.61	100.00	
7	2.30	2.71	4.27	8.29	18.32	18.32	9.29	8.64	6.74	13.48	7.64	100.00	
8	3.33	1.57	2.80	2.63	5.41	8.63	19.83	15.40	20.32	13.09	6.94	100.00	
9	1.62	0.55	1.47	4.76	9.22	71.82	5.74	1.62	0.41	2.79	.....	100.00
10	4.03	1.99	4.43	8.45	12.18	41.18	17.85	5.37	3.13	0.89	0.50	100.00	
11	5.39	2.58	2.19	2.89	9.78	36.86	16.59	8.38	5.32	8.69	1.33	100.00	
12	1.35	1.04	2.60	4.35	9.63	12.14	24.90	22.16	8.07	10.74	3.00	100.00	
13	3.91	2.37	4.72	4.82	23.74	24.11	20.31	8.20	5.43	2.38	0.01	100.00	
14	1.61	0.61	0.92	2.00	2.08	3.69	4.62	9.15	23.93	26.93	24.46	100.00	
15	0.61	0.44	1.34	4.65	8.58	33.24	30.45	9.38	4.32	6.95	0.04	100.00	
16	2.31	1.24	1.77	3.98	8.42	40.04	23.50	10.70	2.09	0.85	0.10	100.00	
17	2.73	2.33	4.12	12.91	23.87	22.03	15.50	6.95	4.23	4.41	0.92	100.00	
18	1.17	0.30	4.04	3.05	5.55	31.15	22.04	10.18	17.72	4.00	0.80	100.00	
19	0.84	4.38	3.08	10.75	20.78	35.99	21.30	1.64	0.89	0.29	0.06	100.00	
20	0.65	0.84	1.95	5.68	14.60	24.84	21.12	13.31	7.69	7.27	2.10	100.00	
21	2.55	1.93	2.02	5.73	8.89	11.52	8.09	8.97	16.71	21.55	12.05	100.00	
22	0.54	0.52	1.89	6.41	18.30	31.68	22.05	9.29	5.55	3.29	0.15	100.00	
23	0.70	0.35	1.54	4.69	6.65	8.79	16.89	29.98	17.42	10.89	2.10	100.00	
24	1.86	2.06	1.37	2.35	4.71	6.58	10.69	11.06	20.18	23.77	15.37	100.00	
25	2.09	1.48	2.31	5.78	12.86	28.90	21.43	10.35	6.35	6.38	2.07	100.00	
26	2.77	1.42	2.82	7.13	11.78	22.92	16.39	12.54	8.96	9.24	4.03	100.00	
27	2.19	1.47	2.39	5.99	12.67	27.96	20.64	10.69	6.78	6.83	2.39	100.00	

TABLE IV.—*Showing, by industries, the number of persons and the manufacturing establishments*

Industries.	Running No.	\$4.00 and over.	\$3.50 but under \$4.00.	\$3.00 but under \$3.50.	\$2.50 but under \$3.00.	\$2.00 but under \$2.50.	\$1.50 but under \$2.00.	\$1.25 but under \$1.50.	\$1.00 but under \$1.25.	75 cents but under \$1.00.	50 cents but under 75.	Under 50 cents.	Total.
Agricultural imp., etc..	1	35	28	52	121	480	616	564	231	94	106	16	2,323
Beer and malt	2	150	45	97	547	1,253	808	458	183	175	326	41	4,086
Boots and shoes.....	3	26	41	96	131	180	277	311	465	293	381	130	2,321
Boxes, etc.....	4	10	8	8	16	58	145	146	149	170	248	59	1,017
Brick, etc.....	5	14	8	16	32	49	193	591	268	48	49	3	1,271
Chairs, etc	6	23	6	28	31	82	184	476	1,090	378	343	175	2,916
Cigars, etc	7	28	28	24	94	172	202	88	92	86	135	87	1,032
Clothing, etc.....	8	46	29	38	34	91	137	120	210	371	223	41	1,340
Light, water, etc.....	9	32	17	41	110	706	617	368	48	8	49	4	2,004
Flour, etc.....	10	63	26	54	121	235	533	306	170	41	11	10	1,574
Food, etc	11	44	80	73	86	177	346	214	105	17	81	6	1,229
Furniture.....	12	22	21	33	67	153	472	521	771	297	306	111	2,776
Iron goods, etc.....	13	72	35	82	115	469	489	256	528	149	135	28	2,358
Knit goods.....	14	20	6	18	25	19	44	48	101	395	403	594	1,673
Leather, etc.....	15	22	14	58	135	274	1,141	1,287	606	249	228	13	4,027
Lumber, etc	16	440	233	299	491	1,447	4,673	7,470	3,741	628	530	21	19,973
Machinery, etc	17	111	125	180	538	1,135	1,348	946	514	206	248	65	5,416
Paper and pulp	18	44	23	110	99	194	889	702	454	647	168	1	3,331
Railway shops.....	19	15	20	44	207	281	712	531	282	35	10	6	2,123
Sash, doors, etc.....	20	20	23	97	133	377	670	961	697	435	392	203	4,048
Sheet metal goods.....	21	17	18	16	44	63	117	69	99	156	261	200	1,065
Wagons, etc.....	22	15	23	39	134	492	751	594	361	153	116	5	2,663
Woodenware	23	8	3	13	39	46	113	92	307	208	75	16	915
Woolens, etc.....	24	20	8	17	28	34	97	130	148	232	231	92	1,067
Total.....	25	1,295	864	1,533	3,378	8,454	15,574	17,248	11,580	5,466	5,108	1,930	72,490
Other industries	26	447	270	408	740	1,307	2,908	1,567	1,312	1,177	1,220	914	12,270
All industries.....	27	1,742	1,134	1,941	4,118	9,761	18,482	18,815	12,892	6,643	6,228	2,844	84,700

*percentage of same, reported employed, at classified daily wages in
ments in Wisconsin in 1894.*

Running No.	\$4.00 and over.	\$3.50 but under \$4.00.	\$3.00 but under \$3.50.	\$2.50 but under \$3.00.	\$2.00 but under \$2.50.	\$1.50 but under \$2.00.	\$1.25 but under \$1.50.	\$1.00 but under \$1.25.	75 cents but under \$1.00.	50 cents but under 75.	Under 50 cents.	Total percentage.
1	1.50	1.12	2.21	5.22	19.80	26.52	24.28	9.94	4.04	4.65	.68	100.00
2	3.69	1.10	2.38	13.44	30.81	19.92	11.28	4.01	4.30	8.02	1.07	100.00
3	1.11	1.78	4.12	5.62	7.71	11.88	13.31	19.94	12.57	16.35	5.54	100.00
4	.97	.78	.78	1.56	5.82	14.33	14.37	14.43	16.86	24.38	5.72	100.00
5	1.10	.63	1.26	2.52	3.96	15.19	46.49	21.06	3.78	3.85	.24	100.00
6	.82	.22	.99	1.10	2.91	6.53	16.90	38.71	13.48	12.18	6.21	100.00
7	2.52	2.52	2.20	9.12	16.37	20.44	8.40	8.81	8.28	13.03	8.31	100.00
8	3.43	2.17	2.81	2.53	6.79	10.22	8.96	15.67	27.69	16.64	3.06	100.00
9	1.60	.85	2.03	5.50	35.30	30.85	18.40	2.40	.40	2.45	.20	100.00
10	4.01	1.65	3.44	7.70	14.96	33.96	19.43	10.83	2.61	.77	.64	100.00
11	3.58	6.51	5.94	6.99	14.40	28.15	17.41	8.55	1.38	6.60	.49	100.00
12	.79	.76	1.19	2.41	5.59	17.00	18.74	27.77	10.70	11.05	4.00	100.00
13	3.04	1.48	3.43	4.88	19.92	20.73	10.89	22.38	6.81	5.72	1.17	100.00
14	1.19	.35	1.07	1.49	1.13	2.63	2.92	6.03	23.61	24.08	35.50	100.00
15	.55	.35	1.44	3.35	6.80	28.33	31.96	15.05	6.19	5.66	.32	100.00
16	2.26	1.03	1.44	2.42	7.21	23.35	36.94	19.47	3.15	2.63	.10	100.00
17	2.05	2.31	3.32	9.93	20.96	24.89	17.47	9.49	3.80	4.58	1.20	100.00
18	1.32	.69	3.30	2.98	5.83	26.69	21.07	13.63	19.42	5.04	.03	100.00
19	.76	.95	2.08	9.74	13.24	33.51	25.02	12.34	1.64	.47	.28	100.00
20	.49	.54	2.42	3.82	9.41	16.72	23.98	17.39	10.87	9.79	5.07	100.00
21	1.59	1.69	1.50	4.14	6.39	10.96	6.49	9.29	14.64	24.50	18.79	100.00
22	.55	.57	1.45	4.99	18.34	27.99	22.14	13.46	5.70	4.32	.19	100.00
23	.87	.33	1.42	4.26	5.03	12.35	10.05	33.56	22.19	8.19	1.75	100.00
24	1.84	.73	1.55	2.59	3.11	8.92	11.89	13.70	21.34	25.84	8.49	100.00
25	1.79	1.19	2.11	4.67	11.67	21.52	23.31	15.98	7.55	7.05	2.66	100.00
26	3.64	2.20	3.33	6.03	10.65	23.70	12.78	10.69	9.59	9.94	7.45	100.00
27	2.08	1.34	2.29	4.86	11.52	21.82	22.22	15.22	7.84	7.47	3.36	100.00

TABLE V.—*Showing, by industries, the number of persons and the manufacturing establish*

Industries.	Ranking No.	\$4.00 and over.	\$3.50 but under \$4.00.	\$3.00 but under \$3.50.	\$2.50 but under \$3.00.	\$2.00 but under \$2.50.	\$1.50 but under \$2.00.	\$1.25 but under \$1.50.	\$1.00 but under \$1.25.	75 cents but under \$1.00.	50 cents but under 75c.	Under 50 cents.	Total.
Agricultural impts	1	36	14	33	136	373	900	592	288	98	31	15	2,253
Beer and malt.....	2	93	44	71	648	1,103	669	383	394	162	222	112	3,901
Boots and shoes.....	3	15	15	59	77	127	212	157	155	219	542	116	1,694
Boxes, etc	4	12	2	17	16	37	209	193	202	223	194	182	1,257
Brick, etc	5	6	4	13	23	32	223	455	249	53	34	4	1,096
Chairs, etc	6	25	15	38	43	96	801	492	1,260	496	463	181	3,406
Cigars, etc.....	7	33	13	29	69	158	171	124	73	86	129	80	965
Clothing, etc	8	38	11	45	21	42	106	92	324	301	415	118	1,512
Light, water, etc	9	13	8	25	99	197	1,166	350	53	5	2	1	1,919
Flour, etc.....	10	33	19	28	117	153	451	266	79	22	15	3	1,191
Food, etc	11	23	44	60	75	137	274	230	85	72	37	1	1,066
Furniture.....	12	31	7	26	36	135	547	724	942	356	371	107	3,332
Iron goods, etc	13	12	12	24	63	248	338	252	292	162	91	16	1,500
Knit goods.....	14	20	6	13	18	17	49	61	215	292	494	406	1,500
Leather, etc	15	18	21	43	107	310	942	1,663	553	129	85	32	3,913
Lumber, etc	16	375	203	249	420	1,045	3,629	7,537	1,868	570	183	18	16,127
Machinery, etc	17	114	89	217	364	1,064	1,342	900	454	261	296	54	5,154
Paper and pulp.....	18	32	11	107	100	202	838	842	377	607	154	17	3,287
Railway shops	19	78	262	208	657	1,188	2,075	1,416	373	57	11	8	6,331
Sash, doors, etc	20	22	18	57	89	261	562	321	454	345	344	153	3,126
Sheet metal goods.....	21	15	15	16	30	93	130	97	127	194	262	187	1,166
Wagons, etc	22	7	4	23	119	308	546	464	204	109	75	7	1,866
Woodenware.....	23	17	11	16	56	72	152	357	478	231	112	19	1,551
Woolens, etc.....	24	17	9	22	26	50	112	162	153	181	263	79	1,074
Total.....	25	1,045	857	1,443	3,459	7,455	15,723	18,695	9,662	5,230	4,974	1,915	70,396
Other industries.....	26	420	238	432	805	1,633	2,932	2,002	1,827	1,069	1,338	1,009	13,697
All industries.....	27	1,505	1,095	1,875	4,264	9,090	18,655	20,697	11,489	6,299	6,212	2,924	84,093

*percentage of same, reported employed, at classified daily wages, in
ments in Wisconsin in 1895.*

Running No.	\$4.00 and over.	\$3.50 but under \$4.00.	\$3.00 but under \$3.50.	\$2.50 but under \$3.00.	\$2.00 but under \$2.50.	\$1.50 but under \$2.00.	\$1.25 but under \$1.50.	\$1.00 but under \$1.25.	75 cents but under \$1.00.	50 cents but under 75c.	Under 50 cents.	Total percentages.
1	1.50	0.62	1.56	6.08	16.78	26.63	26.28	11.89	4.35	3.60	0.67	100.00
2	2.38	1.13	1.82	16.62	28.28	17.15	9.82	10.09	4.15	5.69	2.87	100.00
3	0.85	0.88	3.49	4.56	7.49	12.52	9.27	9.15	12.93	31.99	6.55	100.00
4	9.93	0.15	1.12	1.09	2.91	16.31	14.96	16.26	17.31	14.91	14.05	100.00
5	0.55	0.37	1.15	2.09	2.92	20.35	41.52	22.72	4.84	3.09	0.37	100.00
6	0.74	0.44	1.03	1.27	2.78	8.84	14.46	37.00	14.54	13.59	5.31	100.00
7	3.41	1.35	3.01	7.15	16.37	17.72	12.85	7.57	8.91	13.37	5.29	100.00
8	3.51	0.78	2.98	1.39	2.78	6.91	6.09	21.42	19.92	27.44	7.80	100.00
9	0.68	0.41	1.31	5.19	10.27	60.75	18.22	2.74	0.27	0.10	0.06	100.00
10	2.77	1.59	2.35	9.82	13.26	37.87	22.34	6.64	1.85	1.26	0.25	100.00
11	2.08	4.01	5.47	6.83	12.48	24.96	26.41	7.74	6.56	3.37	0.09	100.00
12	0.93	0.21	0.75	2.58	4.06	16.42	21.73	28.27	10.68	11.14	3.20	100.00
13	0.76	0.76	1.51	4.04	15.89	24.87	13.16	18.70	10.37	5.89	1.02	100.00
14	1.25	0.38	0.81	1.14	1.08	3.08	3.85	13.52	18.37	31.08	25.44	100.00
15	0.46	0.53	1.22	2.73	7.92	24.06	42.63	14.14	3.30	2.17	0.82	100.00
16	2.33	1.25	1.54	2.60	6.48	22.50	46.74	11.76	3.54	1.13	0.11	100.00
17	2.21	1.73	4.21	7.06	20.61	26.04	17.47	8.81	5.07	5.71	1.05	100.00
18	0.98	0.34	3.26	3.05	6.11	25.50	25.62	11.47	18.47	4.68	0.52	100.00
19	1.23	4.14	8.23	10.38	18.73	32.78	22.37	5.89	0.91	0.17	0.12	100.00
20	0.69	0.59	1.81	2.84	8.45	17.82	26.26	14.55	11.03	11.07	4.89	100.00
21	1.29	1.29	1.38	2.57	7.97	11.16	8.32	10.89	16.63	22.47	16.03	100.00
22	0.36	0.21	1.23	6.38	16.51	29.26	24.86	10.93	5.84	4.02	0.38	100.00
23	1.09	0.71	1.03	3.61	4.64	11.73	23.03	30.2	14.89	7.22	1.23	100.00
24	1.57	0.83	2.04	2.43	4.66	10.43	15.09	14.25	76.88	24.49	7.35	100.00
25	1.54	1.22	2.05	4.91	10.59	22.33	26.56	13.73	7.43	6.92	2.72	100.00
26	3.01	1.74	3.15	5.88	11.98	21.43	14.63	13.36	7.73	9.77	7.37	100.00
27	1.78	1.32	2.23	5.07	10.82	22.18	24.61	13.66	7.48	7.38	3.47	100.00

TABLE VI.—*Showing, by industries, the number of persons and the manufacturing establish-*

Industries.	Running No.	\$4.00 and over.	\$3.50 but under \$4.00.	\$3.00 but under \$3.50.	\$2.50 but under \$3.00.	\$2.00 but under \$2.50.	\$1.50 but under \$2.00.	\$1.25 but under \$1.50.	\$1.00 but under \$1.25.	75 cents but under \$1.00.	50 cents but under 75c.	Under 50 cents.	Total.
Agricultural impls....	1	29	71	36	127	397	617	520	289	92	95	12	2,285
Beer and malt.....	2	77	205	41	568	945	892	262	114	66	462	135	3,170
Boots and shoes	3	8	37	26	75	126	337	302	270	275	718	179	2,853
Boxes, etc.....	4	8	7	13	15	44	169	150	243	134	297	198	1,276
Brick, etc	5	10	18	61	44	121	1,187	652	329	66	51	4	2,543
Chairs, etc.....	6	20	10	24	23	120	195	881	966	152	341	.....	2,752
Cigars, etc.....	7	13	7	26	62	103	279	138	63	64	114	121	990
Clothing, etc.....	8	30	30	26	25	53	89	92	256	656	462	184	1,903
Light, water, etc.....	9	18	29	30	146	893	511	362	24	3	35	12	2,063
Flour, etc.....	10	25	19	29	93	171	510	219	56	14	8	.....	1,147
Food, etc	11	29	62	57	61	212	514	591	273	527	435	42	2,806
Furniture	12	9	8	28	56	135	459	671	662	262	276	108	2,674
Iron goods, etc.....	13	133	64	96	218	462	699	619	675	155	207	11	3,339
Knit goods..	14	16	6	6	15	20	45	61	206	328	605	297	1,605
Leather, etc.....	15	19	16	59	128	435	1,441	1,650	331	125	180	44	4,426
Lumber, etc.....	16	221	265	201	346	942	3,558	8,838	2,099	349	317	122	17,258
Machinery, etc	17	73	110	193	623	1,175	1,541	1,062	394	221	382	238	6,017
Paper and pulp	18	15	7	79	93	169	748	979	517	554	135	17	3,313
Railway shops.....	19	80	322	140	473	1,051	1,759	1,167	203	43	5	.....	5,248
Sash, doors, etc.....	20	11	23	36	104	354	706	843	699	173	251	84	3,299
Sheet metal goods.....	21	13	17	21	56	150	311	272	283	227	557	147	2,054
Wagons, etc.....	22	13	21	26	99	289	685	786	230	131	111	12	2,363
Woodenware	23	.....	11	12	3	30	175	884	271	100	82	65	1,633
Woolens, etc.....	24	4	7	13	16	39	125	91	190	131	315	106	1,037
Total.....	25	882	1,372	1,279	3,472	8,439	17,532	22,092	9,668	4,853	6,441	2,138	28,166
Other industries.....	26	148	161	217	518	1,305	8,778	1,777	2,061	1,651	2,304	775	19,699
All industries	27	1,030	1,533	1,496	3,990	9,744	26,310	23,869	11,729	6,504	8,749	2,913	47,865

*percentage of same, reported employed, at classified daily wages in-
ments in Wisconsin in 1896.*

Running No.	\$4.00 and over.	\$3.50 but under \$4.00.	\$3.00 but under \$3.50.	\$2.50 but under \$3.00.	\$2.00 but under \$2.50.	\$1.50 but under \$2.00.	\$1.25 under \$1.50.	\$1.00 but under \$1.25.	75 cents but under \$1.00.	50 cents under 75.	Under 50 cents.	Total percentage.
1	1.27	3.15	1.58	5.56	17.33	27.00	22.78	12.65	3.98	4.19	0.53	100.00
2	2.04	5.44	1.09	15.07	25.15	23.66	6.95	3.02	1.75	12.26	3.57	100.00
3	0.34	1.57	1.10	3.19	5.35	14.28	12.84	11.47	11.69	30.56	7.61	100.00
4	0.62	0.55	1.02	1.17	3.44	13.23	11.74	19.01	10.48	23.24	15.50	100.00
5	0.39	0.71	2.39	1.73	4.76	46.68	25.64	12.94	2.59	2.01	0.16	100.00
6	0.73	0.37	0.87	0.83	4.36	7.09	32.01	35.88	5.52	12.39	.....	100.00
7	1.31	0.71	2.63	6.26	10.41	28.19	13.94	6.35	6.46	11.52	12.22	100.00
8	1.54	1.54	1.36	1.32	2.73	4.67	4.83	13.46	34.47	24.28	9.67	100.00
9	0.87	1.41	1.46	7.08	43.23	24.77	17.54	1.17	0.14	1.70	0.58	100.00
10	2.44	1.66	2.53	8.10	14.91	44.47	19.10	4.88	1.32	0.69	.....	100.00
11	1.03	2.21	2.07	2.28	7.59	18.32	21.06	9.74	18.75	15.50	1.43	100.00
12	0.34	0.29	1.03	2.09	5.05	17.16	25.10	24.76	9.80	10.32	4.04	100.00
13	3.98	1.91	2.86	6.53	13.84	20.93	18.54	20.22	4.65	6.19	0.33	100.00
14	0.99	0.38	0.38	0.94	1.23	2.80	3.80	12.88	20.44	37.70	18.51	100.00
15	0.43	0.36	1.33	2.90	9.82	32.55	37.26	7.43	2.82	4.06	0.99	100.00
16	1.28	1.53	1.18	2.01	5.46	20.62	51.19	12.16	2.02	1.84	0.71	100.00
17	1.30	1.83	3.21	10.35	19.53	25.61	17.65	6.53	3.66	6.35	3.96	100.00
18	0.43	0.21	2.39	2.81	5.10	22.58	29.55	15.61	16.72	4.07	0.51	100.00
19	1.52	6.14	2.67	9.01	20.03	33.52	22.23	3.97	0.82	0.09	.....	100.00
20	0.34	0.67	1.10	3.17	10.76	21.47	25.64	21.26	5.41	7.63	2.55	100.00
21	0.63	0.82	1.02	2.72	7.30	15.14	13.24	13.82	11.05	27.11	7.15	100.00
22	0.15	0.89	1.09	4.15	12.13	27.91	32.96	9.65	5.49	4.66	0.50	100.00
23	.....	0.63	0.74	0.18	1.83	10.72	54.13	16.59	6.12	5.02	3.99	100.00
24	0.39	0.66	1.25	1.54	3.76	12.05	8.78	18.32	12.65	30.38	10.22	100.00
25	1.13	1.76	1.63	4.44	10.79	22.43	28.28	12.37	6.21	8.25	2.73	100.00
26	0.73	0.80	1.10	2.68	6.63	44.56	9.02	10.46	8.38	11.71	3.91	100.00
27	1.06	1.56	1.53	4.05	9.96	26.88	24.39	11.99	6.61	8.94	2.97	100.00

TABLE VII.—*Showing, by industries, the number of persons and the manufacturing establish*

Industries.	Running No.	\$4 00 and over.	\$3 50 but under \$4 00.	\$3 00 but under \$3 50.	\$2 50 but under \$3 00.	\$2 00 but under \$2 50.	\$1 50 but under \$2 00.	\$1 25 but under \$1 50.	\$1 00 but under \$1 25.	75 cents but under \$1 00.	50 cents but under 75.	Under 50 cents.	Total.
Agricultural impts.	1	16	17	32	98	414	708	558	240	89	55	5	2,230
Beer and malt.....	2	57	45	47	697	952	932	319	111	99	332	173	3,764
Boots and shoes	3	13	34	29	75	145	385	278	274	259	728	160	2,384
Boxes, etc	4	7	3	13	15	67	205	185	245	160	312	208	1,425
Brick, etc	5	80	185	42	93	310	1,554	789	299	27	37	29	3,445
Chairs, etc.....	6	9	9	20	18	80	276	841	1,166	265	470	157	3,310
Cigars, etc.....	7	9	7	8	51	111	237	136	92	40	123	168	977
Clothing, etc.....	8	34	14	35	32	62	130	198	379	270	503	208	1,763
Light, water, etc.....	9	14	29	76	122	830	361	208	365	79	17	.....	2,101
Flour, etc.....	10	15	10	14	82	144	553	232	67	16	14	1	1,148
Food, etc	11	9	27	37	53	212	568	730	228	1,029	839	80	3,797
Furniture.....	12	5	8	17	36	136	432	678	766	206	155	204	2,687
Iron goods, etc.....	13	86	57	63	186	478	879	1,101	588	226	278	13	3,955
Knit goods.....	14	8	4	9	20	29	16	180	169	317	756	355	1,863
Leather, etc	15	18	25	29	97	406	1,312	2,065	433	199	226	56	4,869
Lumber, etc.....	16	226	228	178	319	977	4,146	8,442	1,910	521	317	115	17,379
Machinery, etc.....	17	64	99	205	598	1,336	1,365	1,417	323	281	482	266	6,636
Paper and pulp.....	18	11	5	82	94	183	830	1,102	843	440	309	13	3,417
Railway shops.....	19	28	625	317	362	2,163	4,236	2,108	149	47	1	.....	10,115
Sash, doors, etc.....	20	7	21	36	102	351	752	770	778	327	413	295	3,852
Sheet metal goods.....	21	9	13	13	62	116	224	221	323	241	811	142	2,175
Wagons, etc	22	9	24	34	120	579	947	531	216	89	62	11	2,622
Woodenware.....	23	.....	3	4	12	26	162	691	155	92	77	78	1,330
Woolens, etc	24	3	9	13	14	32	115	109	195	139	424	113	1,186
Total.....	25	737	1,496	1,353	3,365	10,137	21,422	23,890	9,938	5,478	7,741	2,853	88,410
Other industries.....	26	124	178	279	495	1,213	2,515	1,767	1,128	1,159	1,622	863	11,343
All industries.....	27	861	1,674	1,632	3,860	11,350	23,937	25,657	11,066	6,637	9,363	3,716	99,753

*percentage of same reported employed, at classified daily wages in
ments in Wisconsin in 1897.*

Running No.	\$4.00 and over.	\$3.50 but under \$4.00.	\$3.00 but under \$3.50.	\$2.50 but under \$3.00.	\$2.00 but under \$2.50.	\$1.50 but under \$2.00.	\$1.25 but under \$1.50.	\$1.00 but under \$1.25.	75 cents but under \$1.00.	50 cents but under 75.	Under 50 cents.	Total percentage.
1	0.72	0.73	1.43	4.40	18.56	31.66	28.04	10.71	4.06	2.46	0.23	100.00
2	1.52	1.19	1.26	18.52	25.29	24.76	8.48	2.94	2.63	8.82	4.89	100.00
3	0.54	1.43	1.22	3.31	6.09	16.14	11.66	11.49	10.87	30.54	6.71	100.00
4	0.49	0.21	0.91	1.27	4.70	14.39	13.05	17.27	11.23	21.89	14.89	100.00
5	2.32	5.37	1.22	6.69	8.99	45.11	22.90	8.71	0.78	1.07	0.84	100.00
6	0.27	0.27	0.60	0.54	2.42	8.84	25.41	35.20	8.01	14.20	4.74	100.00
7	0.92	0.63	0.82	5.22	11.36	24.26	13.92	9.42	4.09	12.59	16.68	100.00
8	1.93	0.79	1.99	1.82	3.52	7.38	11.23	15.82	15.31	28.53	11.68	100.00
9	0.66	1.36	3.62	5.81	39.51	17.18	9.90	17.37	3.76	0.81	.....	100.00
10	1.31	0.87	1.22	7.14	12.54	48.17	20.21	5.84	1.39	1.22	0.09	100.00
11	0.24	0.71	0.98	1.39	5.58	14.69	19.23	5.87	27.10	22.10	2.11	100.00
12	0.19	0.11	0.63	1.34	5.07	17.94	25.23	28.46	7.67	5.39	7.97	100.00
13	2.17	1.44	1.59	4.70	11.96	22.22	27.84	14.87	5.72	7.04	0.45	100.00
14	0.43	0.22	0.43	1.07	1.55	0.87	9.66	9.07	17.02	40.57	19.06	100.00
15	0.41	0.51	0.59	1.99	8.40	26.94	42.41	8.89	4.08	4.64	1.14	100.00
16	1.30	1.81	1.02	1.84	5.63	23.86	48.58	10.99	2.99	1.82	0.66	100.00
17	0.96	1.48	3.09	9.01	20.13	20.58	21.37	7.88	4.23	7.26	4.01	100.00
18	0.32	0.14	3.39	2.76	5.36	24.29	32.25	10.04	12.88	9.04	0.53	100.00
19	0.28	6.18	3.13	3.58	21.38	42.46	21.04	1.47	0.47	0.01	.....	100.00
20	0.18	0.54	0.94	2.65	9.11	19.52	19.99	20.20	8.49	10.72	7.66	100.00
21	0.41	0.60	0.60	2.85	5.33	10.29	10.16	14.85	11.08	37.29	6.54	100.00
22	0.34	0.92	1.29	4.58	22.06	36.12	20.25	8.23	3.39	2.38	0.42	100.00
23	.....	0.23	0.31	0.89	1.96	12.13	51.93	13.92	6.92	5.79	5.87	100.00
24	0.26	0.76	1.09	1.13	2.69	9.69	9.19	16.44	13.42	35.75	9.53	100.00
25	0.53	1.69	1.53	3.81	11.43	24.23	27.02	11.24	6.19	8.76	3.22	100.00
26	1.09	1.57	2.46	4.37	10.69	22.18	15.53	9.94	10.22	14.29	7.61	100.00
27	0.86	1.67	1.64	3.87	11.37	23.99	25.74	11.09	6.65	9.39	3.73	100.00

Proportion of persons receiving classified daily wages, 1888.

DIAGRAM I.

CLASSIFICATION.	Number of persons.	PROPORTIONS.	Per- centages.
\$1.00 per day and over	1,707		2.12
3.50 but under \$4.00	988		1.20
3.00 but under 3.50	1,887		2.47
2.50 but under 3.00	4,300		5.34
2.00 but under 2.50	9,242		11.43
1.50 but under 2.00	21,443		26.94
1.25 but under 1.50	18,640		23.16
1.00 but under 1.25	8,478		10.53
.75 but under 1.00	5,406		6.71
.50 but under .75	5,582		6.93
Under 50 cents	2,752		3.42
Aggregates	80,510		100.00












Proportion of persons receiving classified daily wages, 1891.

DIAGRAM II.

CLASSIFICATION.	Number of persons.	PROPORTIONS.	Per-centages.
\$1.00 per day and over	2,281	.....	2.29
3.50 but under \$1.00	1,587	.....	1.60
3.00 but under 3.50	2,743	.....	2.82
2.50 but under 3.00	6,488	.....	6.66
2.00 but under 2.50	11,295	.....	11.59
1.50 but under 2.00	23,893	.....	29.60
1.25 but under 1.50	19,048	.....	19.54
1.00 but under 1.25	10,316	.....	10.53
.75 but under 1.00	6,133	.....	6.29
.50 but under .75	5,929	.....	6.08
Under 50 cents	2,878	.....	2.95
Aggregates	97,481	.....	100.00








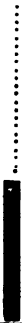



Proportion of persons receiving classified daily wages, 1893.

DIAGRAM III

CLASSIFICATION.	Number of persons.	PROPORTIONS.	Per-centages.
\$4.00 per day and over	2,280		2.19
3.50 but under \$4.00	1,513		1.47
3.00 but under 3.50	2,461		2.39
2.50 but under 3.00	6,170		5.99
2.00 but under 2.50	13,032		12.67
1.50 but under 2.00	28,756		27.96
1.25 but under 1.50	21,225		20.64
1.00 but under 1.25	11,006		10.69
.75 but under 1.00	6,962		6.78
.50 but under .75	7,028		6.83
Under 50 cents	2,452		2.39
Aggregates	102,865		100.00












Proportion of persons receiving classified daily wages, 1894.

DIAGRAM IV

CLASSIFICATION.	Number of persons.	PROPORTIONS.	Per- centages.
\$1.00 per day and over	1,742		2.05
85¢ but under \$1.00	1,134		1.34
80¢ but under 85¢	1,911		2.29
75¢ but under 80¢	4,118		4.88
70¢ but under 75¢	9,761		11.82
65¢ but under 70¢	18,482		21.82
60¢ but under 65¢	18,315		22.22
55¢ but under 60¢	12,892		15.22
50¢ but under 55¢	6,643		7.84
45¢ but under 50¢	6,828		7.47
Under 50 cents	2,814		3.36
Aggregates	84,700		100.00












Proportion of persons receiving classified daily wages, 1895.

DIAGRAM V.

CLASSIFICATION.	Number of persons.	PROPORTIONS.	Per- centages.
\$4.00 per day and over	1,505		1.78
3.50 but under \$4.00	1,035		1.32
3.00 but under 3.50	1,875		2.23
2.50 but under 3.00	4,281		5.07
2.00 but under 2.50	9,080		10.82
1.50 but under 2.00	18,635		22.19
1.25 but under 1.50	20,697		24.61
1.00 but under 1.25	11,439		13.66
.75 but under 1.00	6,239		7.49
.50 but under .75	6,212		7.38
Under 50 cents	2,924		3.47
Aggregates	84,085		100.00

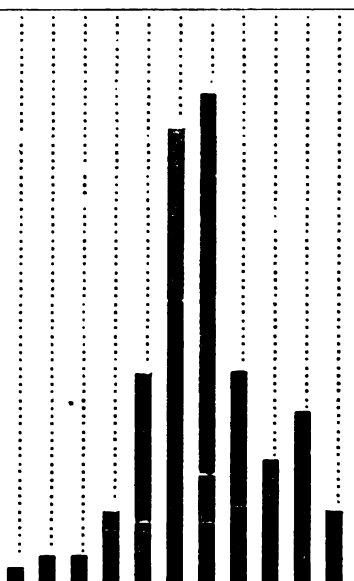
Proportion of persons receiving classified daily wages, 1896.

DIAGRAM VI.

CLASSIFICATION.	Number of persons.	PROPORTIONS.	Per-centages.
\$4.00 per day and over.....	1,030		1.06
3.50 but under \$4.00.....	1,533		1.56
3.00 but under 3.50.....	1,496		1.53
2.50 but under 3.00.....	3,960		4.03
2.00 but under 2.50.....	9,744		9.96
1.50 but under 2.00.....	26,310		26.88
1.25 but under 1.50.....	23,809		24.30
1.00 but under 1.25.....	11,729		11.99
.75 but under 1.00.....	6,504		6.64
.50 but under .75.....	8,749		8.94
Under 50 cents.....	2,913		2.97
Aggregates.....	97,867		100.00

Proportion of persons receiving classified daily wages, 1897.

DIAGRAM VII.

CLASSIFICATION.	Number of persons.	PROPORTIONS.	Per-centages.
\$1.00 per day and over.....	861		.86
3.50 but under \$1.00.....	1,674		1.67
3.00 but under 3.50.....	1,632		1.64
2.50 but under 3.00.....	3,860		3.87
2.00 but under 2.50.....	11,350		11.37
1.50 but under 2.00.....	23,937		23.99
1.25 but under 1.50.....	25,657		25.74
1.00 but under 1.25.....	11,066		11.09
.75 but under 1.00.....	6,637		6.65
.50 but under .75.....	9,363		9.39
Under 50 cents.....	3,716		3.73
Aggregates.....	99,733		100.00

As seen, the preceding presentations under the "Course of Wages" consists of seven tables and seven diagrams, and the data contained in them cover the number of persons employed at classified wages in the manufacturing industries in this state for seven years, beginning with 1888. One table and one diagram has been devoted to the data for each year. The tables show by industries for their respective years, the number and percentage of persons employed at each classified rate, and each table covers two pages. The diagrams show, for their respective years, the aggregate persons for all industries which received classified daily wages as well as the total number, proportion and percentage for each class.

The manner of presentation is therefore such that yearly comparisons are easily possible, not only of the data for each industry but of the total for all industries. Detailed comparisons and analyses were also intended, but for good reasons it was found impossible, at this time, to carry these to each individual industry. The aggregates for each year, however, have been carefully presented and analyzed. The first step in this direction is the following table, which gives for each rate and year the aggregate number employed, and besides this a number of other presentations tending to show the ups and downs in the course of wages during the period. This table is followed by three diagrams, the first of which illustrates the changes from year to year in the number employed at the various rates. The second illustrates the number employed at a certain rate or over; while the third in order shows the rise or fall by periods of years.

TABLE VIII.—*Statement showing for each of the seven years in-receiving classified wages in the manufacturing industries*

Classification of wages.	Running No.	1888. No.	1891. No.	1893. No.	1894. No.	1895. No.	1896. No.	1897. No.
\$1.00 and over.....	1	1,707	2,231	2,280	1,742	1,505	1,030	861
3.50 but under \$4.00.....	2	968	1,567	1,513	1,134	1,096	1,533	1,674
3.00 but under 3.50.....	3	1,987	2,743	2,461	1,941	1,875	1,496	1,632
2.50 but under 3.00.....	4	4,300	6,488	6,170	4,118	4,264	3,990	3,860
2.00 but under 2.50.....	5	9,242	11,295	13,032	9,761	9,080	9,744	11,350
1.50 but under 2.00.....	6	21,448	28,853	28,756	18,482	18,655	26,310	23,937
1.25 but under 1.50.....	7	18,640	19,048	21,225	16,915	20,697	23,869	25,657
1.00 but under 1.25.....	8	8,478	10,316	11,006	12,892	11,489	11,729	11,066
.75 but under 1.00.....	9	5,406	6,133	6,962	6,643	6,289	6,504	6,637
.50 but under .75.....	10	5,582	5,929	7,028	6,328	6,212	8,749	9,363
Under 50 cents.....	11	2,752	2,878	2,452	2,844	2,924	2,913	3,716
Aggregates.....		80,510	97,481	102,865	84,700	84,085	97,867	99,753

*Total number and percentage of same for each year included,
those receiving less*

\$1.50 and over.....	1	8,962	13,029	12,404	8,935	8,739	8,049	8,027
2.00 and over.....	2	12,204	24,324	25,436	18,066	17,829	17,798	19,377
1.50 and over.....	3	39,652	53,177	54,192	37,178	36,484	44,103	43,314
1.25 and over.....	4	58,392	72,225	75,417	55,993	57,181	67,972	63,971
1.00 and over.....	5	66,770	82,541	86,423	68,885	69,670	79,701	80,037
Under \$1.00.....	6	13,740	14,940	16,442	15,815	15,425	18,166	18,716

*Average number and percentage of persons for 1888, 1891, 1893, and
and of those receiving*

	Average persons. 1888-91-93.	Average persons. 1894-95-96.	Number. 1897.
\$2.00 and over.....	22,655	18,106	19,377
1.25 and over.....	68,645	60,382	65,971
Under \$1.25.....	24,973	28,505	30,782

cluded, the total number of persons, and the percentage of same of Wisconsin, as compiled from the reports of the employers.

Running No.	1888. Per cent.	1891. Per cent.	1893. Per cent.	1894. Per cent.	1895. Per cent.	1896. Per cent.	1897. Per cent.
1	2.12	2.29	2.19	2.06	1.78	1.06	.86
2	1.20	1.60	1.47	1.34	1.32	1.56	1.67
3	2.47	2.82	2.39	2.29	2.23	1.53	1.64
4	5.34	6.66	5.99	4.86	5.07	4.08	3.87
5	11.48	11.59	12.67	11.52	10.82	9.96	11.37
6	26.64	29.60	27.96	21.82	22.18	26.88	23.99
7	23.16	19.54	20.64	22.22	24.61	24.39	25.74
8	10.53	10.58	10.69	15.22	13.66	11.99	11.09
9	6.71	6.29	6.78	7.84	7.48	6.64	6.65
10	6.98	6.06	6.83	7.47	7.38	8.94	9.39
11	3.62	2.95	2.39	3.36	3.47	2.97	3.73
.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00

receiving \$2.50, \$2.00, \$1.50, \$1.25, \$1.00 per day and over and of
than \$1.00 per day.















1	11.13	13.37	12.04	10.55	10.40	8.23	8.04
2	22.61	24.96	24.71	22.07	21.22	18.19	19.41
3	49.25	51.56	52.67	43.89	43.40	45.07	43.40
4	72.41	74.10	73.31	66.11	68.01	69.46	69.14
5	82.94	81.68	81.00	81.33	81.67	81.45	80.23
6	17.06	15.32	16.00	18.67	18.33	18.55	19.77

for 1894, 1895, 1896, 1897, receiving \$2.00 and \$1.25 per day and over
less than \$1.25 per day.






















	Average per cent. 1888-91-93.	Average per cent. 1894-95-96.	Per cent. 1897.
\$2.00 and over.....	24.09	20.49	19.41
1.25 and over.....	73.27	67.86	69.14
Under \$1.25.....	26.73	32.14	30.86

Classified daily wages in manufacturing industries in Wisconsin, from 1888 to 1897, inclusive.

DIAGRAM VIII.












Classifi- cation.	Year.	PROPORTIONS AND NUMBER.	Per- centages.	
\$4 per day and over.	1888		1,707	2.13
	1891		2,231	2.29
	1893		2,220	2.19
	1894		1,742	2.06
	1895		1,505	1.78
	1896		1,080	1.06
	1897		861	.86
\$3.50 but under \$4.	1888		938	1.20
	1891		1,567	1.60
	1893		1,513	1.47
	1894		1,134	1.34
	1895		1,095	1.32
	1896		1,533	1.56
	1897		1,674	1.67

Unskilled daily wages in manufacturing industries in Wisconsin, from 1888 to 1897, inclusive.
 DIAGRAM VIII—continued.



























Classification.	Year.	Proportions and Number.	Per- centages.
\$3 and under \$3.50.	1888		2.47
	1891		3.33
	1893		2.99
	1894		2.29
	1895		2.28
	1896		1.53
	1897		1.64
\$3.50 but under \$3.	1888		5.34
	1891		6.66
	1893		5.99
	1894		4.86
	1895		5.07
	1896		4.08
	1897		3.87
\$2.50 but under \$2.50.	1888		11.45
	1891		11.59
	1893		12.67
	1894		11.51
	1895		10.82
	1896		9.96
	1897		11.37

Classified daily wages in manufacturing industries in Wisconsin, from 1888 to 1897, inclusive.

DIAGRAM VIII—continued.

Classif- cation.	Year.	PROPORTIONS AND NUMBER.	Per- centages.
\$1.50 but under \$2.00.	1888		28.64
	1891		29.60
	1893		27.96
	1894		21.82
	1895		22.18
	1896		26.88
	1897		23.99
\$1.50 but under \$1.75.	1888		23.16
	1891		19.84
	1893		20.64
	1894		22.22
	1895		24.61
	1896		24.39
	1897		25.74
\$1.25 but under \$1.50.	1888		10.83
	1891		10.58
	1893		10.69
	1894		15.22
	1895		18.66
	1896		11.99
	1897		11.09
\$1.00 but under \$1.25.	1888		8.478
	1891		10.316
	1893		11.006
	1894		12.892
	1895		11.489
	1896		11.729
	1897		11.096

Classified daily wages in manufacturing industries in Wisconsin, from 1888 to 1897, inclusive.
 DIAGRAM VIII—continued.

Classifi- cation.	Year.	PROPORTIONS AND NUMBER.		Per- centage.
1.00.	1888		5,408	6.71
	1891		6,133	6.29
	1893		6,972	6.78
	1894		6,843	7.84
	1895		6,259	7.45
	1896		6,504	6.44
	1897		6,687	6.65
75 cts. but under \$1.00.	1888		5,382	6.93
	1891		5,939	6.08
	1893		7,026	7.38
	1894		6,328	7.47
	1895		6,212	7.35
	1896		8,719	8.94
	1897		9,363	9.39
50 cts. but under 75.	1888		2,752	3.42
	1891		2,876	2.95
	1893		2,452	2.39
	1894		2,844	3.36
	1895		2,924	3.47
	1896		2,913	2.97
	1897		3,716	3.73
Under 50 cents.	1888		2,752	3.42
	1891		2,876	2.95
	1893		2,452	2.39
	1894		2,844	3.36
	1895		2,924	3.47
	1896		2,913	2.97
	1897		3,716	3.73

As explained already, the returns upon which the foregoing presentations are based embraced, for each year, about 90 per cent. of the total number of workers employed in the manufacturing industries in this state. The basis upon which they were prepared is also uniform throughout and the manner of compilation and presentation practically alike. The figures are, therefore, representative and may safely be used in the following comparisons, showing the fluctuations from year to year in the percentage of persons employed at the different rates of wages.

\$4.00 PER DAY AND OVER.

Under this head we find the percentage of the total number employed each year which received a daily wage of \$4.00 or over. It is plain from the figures below that there was a steady decline in the number receiving this wage:

Years	1888	1891	1893	1894	1895	1896	1897
Percentages	2.12	2.29	2.19	2.06	1.78	1.06	.86
Ave. per cent.....		2.20			1.44		

- The first year included, or in 1888, 2.12 per cent. of the total number employed received \$4.00 per day, or over this amount for the next two years the percentage was 2.29 and 2.19, respectively; in 1894, 2.06 per cent. were paid at this rate and in the three succeeding years the order was 1.78, 1.06 and .86 per cent.

Dividing the years covered into two periods, one for the three years 1888-91-93, and the other for 1894-95-96-97, and taking the average of each the difference becomes more apparent. Thus the average for the first is 2.20 per cent., and that for the second 1.44 per cent., or a difference of .76 per cent.

\$3.50 PER DAY BUT UNDER \$4.00.

The percentage of persons receiving \$3.50 but under \$4.00 per day has slightly increased during the period covered, the highest point being in 1897, and the lowest in 1888. As between the different years, however, the fluctuations have been

slight, there being less than one-half of one per cent. between the highest and lowest point. This is plainly seen from the following:

Years	1888	1891	1893	1894	1895	1896	1897
Percentages	1.20	1.60	1.47	1.34	1.32	1.56	1.67
Av. p. ct. each period		1.42				1.47	

For the years 1888 and 1897, inclusive, the course was thus between 1.20 and 1.67 per cent. The average of the three years first in order is 1.42 and of the four succeeding years 1.47 per cent. There was thus an upward tendency in the latter over the former period of one-twentieth of one per cent.

\$3.00 PER DAY BUT UNDER \$3.50.

The persons employed at this rate per day constituted, for the years included, the following percentage of the total number employed:

Years	1888	1891	1893	1894	1895	1896	1897
Percentages	2.47	2.82	2.39	2.29	2.23	1.53	1.64
Av. p. ct. each period		2.56				1.93	

From 1888 to 1897 the percentage thus stood: 2.47, 2.82, 2.39, 2.29, 2.23, 1.53, 1.64. Up to 1892 there was an increase, the highest being in 1891. From 1893 to 1895 the decrease was steady, but in 1895 the course was slightly reversed, although the change was only a fraction of one per cent.

The average for 1888-93 was 2.56, and for 1894-97, 1.93 per cent. There was thus a fall from the first to the second period of thirty-seven one hundredths of one per cent. in the number of persons employed at the above rate.

\$2.50 PER DAY BUT UNDER \$3.00.

At this rate the following percentage of the total were employed during the period:

Years	1888	1891	1893	1894	1895	1896	1897
Percentages	5.34	6.66	5.99	4.86	5.07	4.08	3.87
Av. p. ct. each period		5.99				4.47	

These figures show an upward tendency which is quite marked from 1888 to 1891 when 6.66 per cent., or the highest during the period was reached. From that year the course was down, the two succeeding years showing a percentage of 5.99 and 4.86, respectively, until in 1895, when the number for one reason or another swelled to 5.07 per cent. A sharp fall of about one per cent. took place the next year and in 1897 the percentage was as low as 3.87.

As to the average of the two periods, the same downward course is noticeable, in fact the average of the first is 5.99, while of the last it is only 4.47, or 1.52 per cent. less.

\$2.00 PER DAY BUT UNDER \$2.50.

The percentage of the total employed at this rate ranged from 9.96 per cent. in 1896, which was the lowest for any year, to 12.67 per cent. in 1893, the highest for the period. For the first and the last year the percentage is 11.48 and 11.37, respectively, or almost the same; for 1891 and 1893 it is 11.59 and 11.52, while in 1895 it is 10.82 per cent. The course during the period was thus upward until in 1893 and then downward until in 1896, when an upward tendency again set in.

Years	1888	1891	1893	1894	1895	1896	1897
Percentages	11.48	11.59	12.67	11.52	10.82	9.96	11.37
Av. p. ct. each period		11.91				10.92	

We see from this that the average of the first period is 11.91 and of the second 10.92 per cent. Comparing the figures in the two cases it is thus found that those of the first exceed those of the second by practically one per cent. Although there was a sharp upward movement in 1897, there was still an average fall in the later period in this case also.

\$1.50 PER DAY BUT UNDER \$2.00.

Under this head we find for the first three years included the largest percentage employed at any of the rates given. As under most of the former classes the highest point is that of

1891. From that year the fall is rapid until the point of 21.82 per cent. is reached in 1894. With 1895 the upward movement again sets in and in 1896 the figures are again at the mark where they were in 1893. The high percentage of 1896, however, was not maintained very long, as the next year shows a drop of practically three per cent. This is the rate that is usually looked upon as the common rate in most industries and this also seems to be borne out by the facts:

Years	1888	1891	1893	1894	1895	1896	1897
Percentages	26.64	29.60	27.96	21.82	22.18	26.88	23.99
Av. p. ct. each period		28.07				23.72	

The average for the periods is thus 28.07 and 23.87 per cent., respectively, or a difference of 4.35 per cent. As this difference represents a reduction in the number of those receiving the above wage, it is evident that strong forces effecting wages during the past few years have been at work.

\$1.25 PER DAY BUT UNDER \$1.50.

The number receiving this wage has increased considerably during the period covered. This is plainly apparent from the following figures:

Years	1888	1891	1893	1894	1895	1896	1897
Percentages	23.16	19.54	20.64	22.22	24.61	24.39	25.74
Av. p. ct. each period		21.12				24.24	

Taking the above presentations by years we find the lowest number at this rate was employed in 1891 and highest in 1897: As 1891 is the year in this period in which the highest wages were paid, the percentage in this case and connection is very significant.

The average wages for each period also increased from 21.12 to 24.24 per cent., or 3.12 per cent. This increase is in a measure an offset to the decrease in the higher classes or rates which have already been considered and unmistakably point to a downward tendency in wages during the time covered.

\$1.00 PER DAY BUT UNDER \$1.25.

In this, as in the foregoing class, the percentage is on the increase towards the latter half of the period. Thus we find the percentage during the first three years in order almost stationary, while with 1894, which is the highest point, the increase set in which, though not maintained during the succeeding years, is still quite marked:

Years	1888	1891	1893	1894	1895	1896	1897
Percentages	10.53	10.58	10.69	15.22	13.66	11.99	11.09
Av. p. ct. each period	10.60			13.00			

Here we find the average of 1888-93 to be 10.60 and for 1894-97, 13.00 per cent. There was thus an increase in the latter of 2.40 per cent., which means that the proportion of wage earners employed at the above rate was that much greater during the later part of the period.

\$.75 PER DAY BUT UNDER \$1.00.

In this class the percentage from year to year varies but little, in fact the difference between the lowest, or that of 1891 and the highest, or that in 1894, is only about one and one-half per cent. The characteristic increase, however, in the later part of the period which has been noticed for the last two classes, is also noticed here:

Years	1888	1891	1893	1894	1895	1896	1897
Percentages	6.71	6.29	6.78	7.84	7.48	6.64	6.65
Av. p. ct. each period	6.59			7.13			

Here again the percentage of the later part of the period is greater than that of the first. While the difference is only about one-half of one per cent., it is in line with the tendency already mentioned.

\$.50 PER DAY BUT UNDER \$.75.

The proportion receiving this wage varies from 6.08 to 9.39 per cent., or 3.31 per cent. As usual the lowest figure is that

for 1891. The highest point, however, which mostly has been found in 1894 or 1895 in these comparisons is here found in 1897:

Years	1888	1891	1893	1894	1895	1896	1897
Percentages	6.93	6.08	6.83	7.47	7.38	8.94	9.39
Av. p. ct. each period		6.61			8.30		

Comparing the average of the first part of the period, which was 6.61 per cent., with 8.30 per cent., or that of the later part, we find an increase of 1.69 per cent. There was thus in this class also an increase in numbers towards the later years.

UNDER 50 CENTS PER DAY.

Here is included in all cases the proportion receiving less than 50 cents per day, which consist almost exclusively of children. The percentages in this case run quite even from year to year, there being a variation from the lowest to the highest of only one and one-third per cent:

Years	1888	1891	1893	1894	1895	1896	1897
Percentages	3.42	2.95	2.39	3.36	3.47	2.97	3.73
Av. p. ct. each period		2.93			3.38		

The average for the first and last part of the period is here 2.93 and 3.38 per cent., respectively, or a slight increase towards the end of the period. As those who are employed at this and the next preceding rate are practically all young children this increase unquestionably points to increase in the employment of children.

From these analyses of the percentage of persons employed at the different rates of wages it clearly appears that during the period covered there was a gradual decrease in the number employed at the higher rates and a corresponding increase in those employed at the lower rates. Especially is this plain from the averages of the first and second half of the period. These are, therefore, presented again.

Classes or rates of wages in which there was a decrease in the number of persons employed.

RATES OF WAGES.	PERCENTAGES.		
	Averages 1888-91-93.	Averages 1894-97.	De- crease.
\$4.00 per day and over.....	2.20	1.44	.76
\$3.00 but under 3.50.....	2.56	1.93	.63
2.50 but under 3.00.....	5.99	4.47	1.52
2.00 but under 2.50.....	11.91	10.92	.99
1.50 but under 2.00.....	23.07	23.72	4.35
Aggregate.....	50.73	42.48	8.25

The above table, showing the decrease in the persons employed, embraces five of the eleven classifications or nearly one-half. These classifications are also with one exception the highest in the scale.

As to the percentage of decrease, it varied from .63, in the second class in order, to 4.35 in the last, the total decrease for all being 8.25, or an average of 1.65 per cent. for each class.

The aggregate number of persons receiving the above rates constituted 50.73 per cent. for 1888, 1891, 1893, and 42.48 per cent. for 1894, 1895, 1896 and 1897. As the lowest rate included is that of \$1.50 per day, this decrease is highly significant.

Classes or rates of wages in which there was an increase in the number of persons employed.

RATES OF WAGES.	PERCENTAGES.		
	Averages 1888-91-93.	Averages 1894-97.	Increase.
\$3.50 per day but under \$4.00.....	1.42	1.47	.05
1.25 per day but under 1.50.....	21.12	24.24	3.12
1.00 per day but under 1.25.....	10.60	13.00	2.40
.75 per day but under 1.00.....	6.59	7.13	.54
.50 per day but under .75.....	6.61	8.30	1.69
Under 50 cents per day.....	2.93	3.38	.45
Aggregate.....	49.27	57.52	8.25

The above table shows the rates in which there was an increase in the number of persons employed in the later part of the per-

iod, together with the percentages for each rate. With one exception, that of the first in order, these rates are all below \$1.50 per day or the lowest in the scale.

The increase varies from .05 per cent. in the first class in order to 3.12 in the second and .45 in the last. The total increase is 8.25 per cent., corresponding thus to the decrease as shown in former table for the higher rates, and the average increase to each class is 1.25 per cent.

The aggregate persons embraced under these rates constituted 49.27 per cent. for 1888, 1891, 1893, and 57.52 per cent. for the last four years in order. The increase in these, the lower rates, thus exactly offsets in number and percentages the decrease shown in the preceding presentation for the higher rates.

In this analysis of the proportion of persons employed at the various rates of wages during the first and second part of the period covered it has been brought out that in all but one class above and including \$1.50 per day there was a decrease in the second part; and that in all classes below this rate there was an increase in the second half. It has also been shown that for the first part those who received \$1.50 per day or over constituted 52.15 per cent. of the whole number employed as against 47.85 per cent. who received less than this amount; and that for the last four years, or second part, this relation had changed so that those who received \$1.50 or above constituted only 43.95 per cent., as against 56.05 who received less than this sum. That these changes in the proportions employed could not have taken place without causing a downward tendency in the course of wages is plain. As to exact fall in wages during this period this method falls short of showing, but the general tendency is clearly indicated.

As to the causes of the downward tendencies of wages during this period we have not far to seek. In the first place there is the general business depression of 1893, which brought down wages in most industries and from which recovery has been slow. Then again, it also appears that industries in which the relative number of women and children employes is the greatest have grown faster than industries in which skilled or grown up male help is required. Both of these causes have been in operation

in this state for some time. It is possible that other causes also may be found, but the ones mentioned have at least been the most effective.

Further illustrations of the course of classified wages may be had from diagrams IX and X, which illustrate, respectively, the second and third sections of the table for "All Industries." These diagrams show conclusively the downward trend from 1893 to 1894, inclusive, and a slight upward turn from that time on. The average for the first half of the period, however, is considerably above that for the second half.

Number and proportion of persons receiving \$2.00, \$3.00, \$4.00, \$5.00, \$6.00, \$7.00, \$8.00, \$9.00, \$10.00, \$11.00, \$12.00, \$13.00, \$14.00, \$15.00, \$16.00, \$17.00, \$18.00, \$19.00, \$20.00 and over in each case in the manufacturing industries, from 1888 to 1897 inclusive.

DIAGRAM IX.

Classification.	No. persons.	Year.	Proportions.	Per-centage.
\$2.50 and over.	8,962	1888	.....	11.13
	13,029	1891	.....	13.37
	22,401	1893	.....	12.04
	8,053	1894	.....	10.55
	8,739	1895	.....	10.40
	5,049	1896	.....	8.23
	8,027	1897	.....	8.04
\$3.00 and over.	13,204	1888	.....	22.61
	24,324	1891	.....	24.96
	25,438	1893	.....	24.71
	13,694	1894	.....	22.07
	17,829	1895	.....	21.22
	17,763	1896	.....	18.19
	19,377	1897	.....	19.41
\$1.50 and over.	39,652	1888	.....	49.25
	53,177	1891	.....	54.56
	54,192	1893	.....	52.67
	37,173	1894	.....	43.99
	26,454	1895	.....	43.40
	44,108	1896	.....	45.07
	43,314	1897	.....	43.40

Number and proportion of persons receiving \$2.50, \$2.00, \$1.50, \$1.25, \$1.00 and over in each case in the manufacturing industries, from 1888 to 1897 inclusive.

DIAGRAM IX—continued.

Classification.	No. persons.	Year.	PROPORTIONS.	Per- centages.
\$1.25 and over.	58,292	1888		72.41
	72,225	1891		74.10
	75,417	1893		73.31
	55,993	1894		66.11
	57,181	1895		68.01
	67,972	1896		69.41
	68,971	1897		69.14
\$1.00 and over.	66,770	1888		82.94
	82,541	1891		81.68
	86,423	1893		84.00
	68,635	1894		81.83
	68,670	1895		81.67
	79,701	1896		81.45
	80,037	1897		80.23
Under \$1.00.	13,740	1888		17.16
	11,940	1891		15.32
	16,442	1893		16.00
	15,915	1894		18.67
	15,425	1895		19.38
	18,166	1896		18.55
	19,716	1897		19.77

Average number and proportion of persons in the manufacturing industries, in each case, for 1888, 1891, 1893, and for 1894, 1896, 1898, and the total number and proportion in 1897 receiving \$2.00 per day and over, \$1.25 and over, and under \$1.25 per day.














DIAGRAM X.

Classification.	Years.	Persons.	PROPORTIONS.	Per-contage.
\$2.00 per day and over.	Ave. 1888-91-93.....	22,655		21.00
	Ave. 1894-95-96.....	18,106		20.49
	1897.....	19,377		19.41
	Ave. 1894-1897.....	18,424		20.22
\$1.25 per day and over.	Ave. 1888-91-93.....	66,645		73.27
	Ave. 1894-95-96.....	60,282		67.86
	1897.....	63,572		69.14
	Ave. 1894-1897.....	62,839		68.18
Under \$1.25 per day.	Ave. 1888-91-93.....	24,973		26.73
	Ave. 1894-95-96.....	28,595		32.14
	1897.....	30,782		30.86
	Ave. 1894-1897.....	31,028		31.82

Average wages in manufacturing establishments as obtained by dividing the total amount paid in wages by the average number of persons employed.

Year.	Persons.	Total wages.	Average wages.	Year.	Persons.	Total wages.	Average wages.
1883....	39,390	\$14,268,213	\$363	1892....	90,936	\$38,295,878	\$426
1885....	38,797	13,710,417	354	1893....	96,540	37,327,810	381
1887....	62,935	23,710,866	377	1894....	88,642	31,400,944	376
1888....	71,218	28,416,394	399	1895....	85,767	32,993,707	384
1889....	80,504	32,575,944	405	1896....	80,051	31,749,822	397
1890....	80,890	33,125,213	410	1897....	87,534	36,583,044	418
1891....	94,069	38,023,247	404				

DIAGRAM XL.

Year.	PROPORTIONS.	Wages.
1883		\$363
1885		354
1887		377
1888		399
1889		405
1890		410
1891		404
1892		421
1893		386
1894		376
1895		384
1896		397
1897		418

The preceding table and diagram show, for a period of thirteen years, or from 1883 to 1897, inclusive, the average yearly amount of wages to each worker as obtained from dividing the aggregate amount paid in wages each year with the average number of workers or persons employed.

While nothing is claimed for this table that is not usually accorded figures of this kind, or averages obtained in the same way, it is a significant fact that the trend of wages observed here

is the same as that for the foregoing tables and diagrams under "classified daily wages." Thus in both cases there was an upward trend in 1888 which continued until the end of 1892. Then a downward trend set in. The lowest point is reached in 1894 and 1895. In 1896 the increase is quite marked and in 1897 still more so, though as yet wages were not up to where they were in 1892, or the year before the break came. The correctness of the figures under classified daily wages is certainly difficult to disprove. The correctness of averages obtained in the above manner is often vigorously assailed. In this case, however, both tend towards the same conclusions.

COURSE OF WAGES IN SIX SKILLED TRADES FROM 1888 TO 1898,
INCLUSIVE.

The foregoing part gives in detail the "Course of classified daily wages" in manufacturing industries in this state from 1888 to 1897, inclusive. From the tables and diagrams in that part it was conclusively shown that in wages there was an upward trend until about the year 1892 and, beginning with 1893, a downward trend which continued until in 1895, when a turn is again perceptible. The upward move this and the following year, however, was very slight and the average for the first half of the period is considerably higher than for the last half. What was thus shown for wages in manufacturing industries the presentations on the following four pages show for the wages of brick and stone masons, carpenters, painters, plumbers, stone cutters, and tinsmiths.

The two tables next in order thus show for each of the six trades included, the number and percentage of persons which were reported as employed at each "classified daily rate of wages" in 1888, 1891, 1893, 1895 and 1898.

The data was obtained partly from previous returns to this bureau and partly through special inquiries which were made in order to be in position to show the "course of wages" in at least a few of the skilled trades, in connection with other presentations of wages in this part.

The wage scale used here is identical with that for manufac-

turers. The manner of presentation is also practically the same. Owing, partly at least, to the fact that in this case the proportion represented is much smaller, and that the data was not, in all cases, received from the same parties, nor even from the same localities in the state, the variations from year to year in the number employed at the different rates are somewhat greater here than for manufactures. While thus there are some shortcomings in these tables, they are worthy of consideration. As a whole they are not likely to vary a great deal from the actual condition.

As to the "ups" and "downs" in the "course of wages" during the period covered the tendency here is very much the same as in manufactures. On the whole the general trend was upward from 1888 to 1892 and then downward until the last year or two, or in 1897 and 1898, which again showed a marked upward turn. As yet, however, the level of 1892 had not been attained.

Number of persons and percentage of same in the following trades: Brick and stone masons, carpenters and painters receiving a classified daily wage for 1898, 1891, 1895, 1898, 1898.

CLASSIFICATION OF WAGES.	NUMBER OF PERSONS.					PERCENTAGES.				
	1898.	1891.	1898.	1895.	1898.	1898.	1891.	1898.	1895.	1898.
Brick and Stone Masons.										
\$1.00 per day and over.....	35	110	98	.....	49	6.17	17.62	14.92	.....	6.65
3.50 but under \$4.00.....	46	89	69	51	25	8.11	6.25	10.52	11.38	3.53
3.00 but under 3.50.....	102	98	82	72	157	17.99	15.38	12.50	16.00	21.30
2.50 but under 3.00.....	95	92	59	57	106	14.76	14.76	8.84	12.67	14.39
2.00 but under 2.50.....	65	87	52	60	87	11.47	13.96	7.93	13.83	13.16
1.50 but under 2.00.....	216	183	255	125	280	37.92	29.32	38.88	27.78	35.23
1.25 but under 1.50.....	9	17	42	55	42	1.53	2.72	6.41	18.99	5.69
1.00 but under 1.25.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
75 but under 1.00.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
50 but under 75.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	567	624	656	450	737	100.00	100.00	100.00	100.00	100.00
Carpenters.										
\$1.00 per day and over.....	18	74	39	18	29	1.16	5.99	4.74	3.00	1.88
3.50 but under 4.00.....	213	550	197	59	45	13.77	44.53	23.93	9.56	3.11
3.00 but under 3.50.....	842	382	283	210	405	54.43	29.32	35.61	35.05	7.07
2.50 but under 3.00.....	445	225	226	250	960	28.77	18.22	27.46	41.72	26.26
2.00 but under 2.50.....	29	24	65	62	91	1.87	1.94	8.26	16.36	5.78
1.50 but under 2.00.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.25 but under 1.50.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.00 but under 1.25.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
75 but under 1.00.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
50 but under 75.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	1,547	1,235	823	599	1,542	100.00	100.00	100.00	100.00	100.00
Painters.										
\$1.00 per day and over.....	15	40	42	3	10	2.07	6.83	6.09	5.0	1.38
3.50 but under 4.00.....	34	47	52	7	18	2.20	8.15	7.55	1.13	2.48
3.00 but under 3.50.....	77	59	91	67	65	4.69	10.22	13.31	11.29	8.94
2.50 but under 3.00.....	352	178	150	117	203	10.62	30.55	21.77	19.69	27.92
2.00 but under 2.50.....	197	45	163	156	247	48.56	25.99	21.19	26.26	33.97
1.50 but under 2.00.....	18	38	23	53	89	27.18	8.32	23.66	22.72	12.24
1.25 but under 1.50.....	16	17	17	51	23	2.48	6.60	4.06	9.77	9.22
1.00 but under 1.25.....	.....	.....	.....	.....	.....	2.20	2.94	2.47	8.59	3.56
75 but under 1.00.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
50 but under 75.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	725	577	639	584	727	100.00	100.00	100.00	100.00	100.00

Number of persons and the percentage of same in the following trades: Plumbers, stone cutters, tinasmiths, receiving a classified daily wage for 1888, 1891, 1895, 1898 and 1898.

Plumbers.

CLASSIFICATION OF WAGES.	NUMBER OF PERSONS.				PERCENTAGES.			
	1888.	1891.	1893.	1895.	1898.	1891.	1893.	1895.
\$4.00 per day and over.....	12	16	23	.....	20	8.08	4.85	.....
3.00 but under \$4.00.....	17	19	65	.....	28	9.52	13.51	6.97
2.00 but under 3.00.....	34	27	69	35	27	13.51	14.58	13.57
1.50 but under 2.00.....	23	42	85	43	34	16.67	17.82	16.67
1.00 but under 1.50.....	40	27	83	43	51	20.21	6.98	18.60
.75 but under 1.00.....	31	34	50	46	180	13.61	10.55	17.83
.50 but under .75.....	16	16	34	38	54	8.08	7.19	14.73
.25 but under .50.....	16	16	115	30	28	7.57	24.27	11.63
Totals.....	193	193	474	258	442	100.00	100.00	100.00

Stonecutters.

CLASSIFICATION OF WAGES.	NUMBER OF PERSONS.				PERCENTAGES.			
	1888.	1891.	1893.	1895.	1898.	1891.	1893.	1895.
\$4.00 per day and over.....	26	32	28	12	27	13.62	12.34	5.74
3.00 but under \$4.00.....	19	20	20	29	23	8.51	8.51	13.57
2.00 but under 3.00.....	25	35	50	35	32	14.89	22.03	16.74
1.50 but under 2.00.....	24	46	38	27	38	19.57	16.74	12.91
1.00 but under 1.50.....	9	65	49	36	45	27.66	21.38	17.26
.75 but under 1.00.....	8	12	25	18	40	10.64	11.00	24.85
.50 but under .75.....	.....	.....	17	.....	10	5.11	7.50	8.60
Totals.....	134	235	227	209	215	100.00	100.00	100.00

Tinasmiths.

CLASSIFICATION OF WAGES.	NUMBER OF PERSONS.				PERCENTAGES.			
	1888.	1891.	1893.	1895.	1898.	1891.	1893.	1895.
\$4.00 per day and over.....	11	14	12	14	26	9.86	7.64	9.09
3.00 but under \$4.00.....	32	28	36	26	32	19.71	22.83	16.88
2.00 but under 3.00.....	41	46	43	48	60	31.39	27.38	31.17
1.50 but under 2.00.....	30	38	39	39	37	29.77	24.84	25.32
1.00 but under 1.50.....	16	16	27	27	32	11.27	17.21	17.54
.75 but under 1.00.....	.....	.....	.....	.....	.....	.....	.....	.....
.50 but under .75.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	132	142	157	154	177	100.00	100.00	100.00

STOCK WAGES AND OTHER FACTORS IN PRODUCTION.

The next table in order show for forty-six industries in this state for 1895, 1896, 1897, the ratio or percentage which the outlay for stock, the amount paid in wages, and the sum of all other expenses of production including profits, bear to the total value or selling price of goods produced.

This data has been computed from the annual returns of the manufacturers to this bureau as presented in the reports of 1895-96, and 1897-98, and is a true description of the actual condition.

As explained already, "Stock" means the cost of all the material and supplies of all kinds entering into, or consumed in the manufacture; "wages" means the amount paid as such in obtaining the product; "Other Expenses" comprises the difference between the sum of Stock and Wages and the total value of the products and consists of taxes, insurance, rent, discounts, incidentals, interest on capital invested, depreciation of the plant, selling expenses, etc., and also of the profits of the business.

The returns from which the computations are made were complete and correct and the figures given here can therefore be depended upon and safely used for comparative or other purposes.

Statement showing, by industries for the years 1895, 1896, 1897, the total value of the goods produced, the total value of the material used, for wages of the labor employed, and for other expenses including the selling price of

INDUSTRIES.	1895.				
	Run- ning No.	Stock or raw material.	Wages.	Other expenses including profits.	Total.
	Percentages.				
Agricultural implements.....	1	53.85	23.21	22.94	100.00
Artisans' tools and hardware specialties..	2	44.51	17.71	27.78	100.00
Bicycles.....	3	61.10	21.25	17.55	100.00
Boots and shoes.....	4	58.10	20.10	21.80	100.00
Boxes, wooden and paper.....	5	56.53	20.84	22.63	100.00
Brick, tile and sewer pipe ..	6	32.04	33.34	34.62	100.00
Brooms, brushes and baskets ..	7	41.75	31.63	26.62	100.00
Burial caskets, etc.....	8	50.81	22.67	27.04	100.00
Cement, lime, plaster ..	9	44.91	20.50	34.75	100.00
Chairs.....	10	46.45	33.08	20.47	100.00
Cigars, snuff, tobacco ..	11	59.25	20.81	20.44	100.00
Clothing.....	12	55.14	18.56	26.30	100.00
Confectionery, crackers.....	13	55.75	12.64	31.71	100.00
Cooking and heating app ..	14	45.50	27.00	27.50	100.00
Cooperage.....	15	55.69	16.72	17.59	100.00
Cotton and linen goods.....	16	51.41	26.33	22.21	100.00
Electrical and gas supplies.....	17	43.75	22.90	33.35	100.00
Flour and feed ..	18	84.73	2.56	12.41	100.00
Food preparations ..	19	82.05	6.60	11.35	100.00
Furniture.....	20	49.20	25.35	24.85	100.00
Furs, gloves and mittens ..	21	60.45	17.23	22.27	100.00
Iron goods (malleable) ..	22	45.70	26.31	27.99	100.00
Knit goods ..	23	55.20	18.96	25.84	100.01
Lager beer.....	24	23.20	10.50	66.30	100.00
Leather.....	25	67.92	12.70	19.38	100.00
Lumber, lath and shingles.....	26	52.15	21.14	26.71	100.00
Malt ..	27	67.20	8.08	21.72	100.00
Machines and machinery.....	28	42.71	28.15	29.14	100.00
Office and saloon fixtures.....	29	41.55	33.91	24.53	100.00
Paints, oils and chem.....	30	73.77	7.36	18.87	100.00
Paper and pulp.....	31	51.52	18.84	29.64	100.00
Printers' supplies.....	32	40.76	31.10	28.15	100.00
Saddlery, harness etc ..	33	53.13	30.52	25.65	100.01
Sash, doors and blinds.....	34	55.29	31.26	23.35	100.00
Sheet metal goods.....	35	51.25	30.75	28.00	100.00
Ship and boat building ..	36	39.73	41.92	18.35	100.00
Soap, lye and potash ..	37	54.89	11.80	33.31	100.00
Staves and heading.....	38	45.80	27.43	26.77	100.00
Stone (granite and marble).....	39	34.13	30.87	35.00	100.00
Straw goods.....	40	42.14	24.50	33.36	100.00
Toys and games.....	41	43.60	28.10	28.30	100.00
Trunks, valises, etc.....	42	49.60	22.64	27.76	100.00
Veneer.....	43	42.42	29.43	28.15	100.00
Wagons, carriages, etc.....	44	49.70	23.10	26.50	100.00
Woodenware.....	45	55.60	23.24	21.16	100.00
Woolen and worsted goods.....	46	54.14	19.50	26.36	100.00
Average .....	.....	53.80	22.47	24.23	100.00

percentage in each case of the outlays for the stock or raw material of production including profits, as based upon the total value of the product.

Run- ning No.	1896.				1897.			
	Stock or raw material.	Wages.	Other expenses including profits.	Total.	Stock or raw material.	Wages.	Other expenses including profits.	Total.
Percentages.					Percentages.			
1	50.00	29.07	27.84	100.00	51.26	22.14	26.60	100.00
2	37.60	22.92	39.48	100.00	38.04	29.24	32.72	100.00
3	57.97	22.89	19.14	100.00	60.24	21.57	18.15	100.00
4	57.72	20.62	21.06	100.00	58.06	20.10	21.84	100.00
5	55.02	20.81	23.57	100.00	55.73	21.88	22.39	100.00
6								
7	29.60	33.62	36.78	100.00	29.66	35.26	35.08	100.00
8	41.60	30.74	27.66	100.00	42.06	35.77	22.17	100.00
9	49.62	21.96	28.40	100.00	50.76	19.58	29.66	100.00
10	45.06	21.65	33.29	100.00	46.05	24.89	29.56	100.00
	43.82	33.56	22.60	100.00	43.19	36.78	21.03	100.00
11								
12	60.68	19.71	19.61	100.00	60.06	20.00	19.94	100.00
13	53.27	18.82	27.91	100.00	53.91	18.00	28.09	100.00
14	56.10	16.10	27.80	100.00	62.52	16.74	20.74	100.00
15	40.22	35.18	24.59	100.00	41.00	34.60	24.40	100.00
	49.39	25.38	25.23	100.00	48.36	29.69	21.95	100.00
16								
17	56.17	25.66	20.17	100.00	58.59	21.45	19.96	100.00
18	38.37	22.49	39.14	100.00	40.28	23.06	36.56	100.00
19	38.81	2.86	14.33	100.00	45.05	2.66	12.29	100.00
20	50.84	6.77	12.39	100.00	52.68	6.55	10.77	100.00
	47.71	26.17	26.12	100.00	45.08	26.21	28.72	100.00
21								
22	57.24	15.78	26.96	100.00	58.55	17.23	24.22	100.00
23	44.54	23.99	31.47	100.00	47.47	23.94	28.59	100.00
24	47.04	24.35	28.61	100.00	47.98	24.14	27.98	100.00
25	21.25	10.71	68.04	100.00	21.85	9.95	68.20	100.00
	72.80	13.81	13.89	100.00	74.71	13.39	11.90	100.00
26								
27	53.82	21.81	24.87	100.00	55.80	20.71	23.99	100.00
28	66.40	8.02	25.58	100.00	66.59	8.06	25.35	100.00
29	39.93	26.66	31.41	100.00	40.86	25.75	30.39	100.00
30	37.89	34.97	27.84	100.00	38.09	33.29	28.62	100.00
	70.61	6.12	23.27	100.00	70.43	6.09	23.48	100.00
31								
32	51.47	18.86	29.67	100.00	53.11	18.92	27.97	100.00
33	39.13	31.24	29.63	100.00	39.47	31.14	29.39	100.00
34	54.19	19.81	26.00	100.00	57.20	19.83	22.97	100.00
35	53.59	21.72	24.69	100.00	54.73	22.03	23.24	100.00
	54.24	17.84	27.92	100.00	56.23	18.89	25.38	100.00
36								
37	41.08	42.23	16.69	100.00	43.62	39.40	16.98	100.00
38	55.44	11.64	32.92	100.00	56.57	10.62	32.81	100.00
39	44.62	27.73	27.65	100.00	43.90	29.91	26.19	100.00
40	36.77	25.62	38.61	100.00	36.52	26.85	36.63	100.00
	41.89	16.71	31.40	100.00	42.24	22.51	35.25	100.00
41								
42	41.81	28.58	29.61	100.00	42.96	30.20	26.72	100.00
43	47.35	29.93	28.73	100.00	48.47	24.04	27.49	100.00
44	36.00	30.70	33.30	100.00	38.75	34.00	27.25	100.00
45	46.77	25.60	27.63	100.00	48.73	22.35	27.92	100.00
	54.21	30.17	15.62	100.00	49.20	26.99	23.81	100.00
46								
	53.86	19.34	26.80	100.00	52.34	19.22	28.44	100.00
	56.74	20.46	22.80	100.00	57.77	21.53	20.70	100.00

FACTORY INSPECTION.

In the preceding pages of this part a few facts concerning the establishment and growth of this bureau as a whole have been pointed out, and among other things it was noticed that the bureau was organized in 1883, or more than sixteen years ago, and that its duties relate to statistics as well as to factory inspection or the enforcement of the factory laws. The work done in the statistical field since its organization has also been shown. Under "Statistics" is presented the more important conclusions of the various investigations, together with the "course of wages" in the various industries. One branch of the duties of the bureau has therefore been described. What was thus done for the statistical work in the foregoing part will, in a measure at least, be done for "factory inspection" in the following pages.

As has been said already no inspectors were provided for during the first two years of the existence of this bureau. The commissioner was evidently expected to personally perform all duties coming under his office. In 1885, or two years after the organization of the bureau, the appointment of one inspector was authorized and in 1887 a second inspector was added. From that time up to the present year, 1899, no change was made in this service. The work of inspection for the period covered here has, therefore, mainly been performed by from one to two persons only, a number which is entirely inadequate for a state of the size and importance of Wisconsin. By those who may read this synopsis, or happen to compare the same with similar statements for other states, these facts should be taken into consideration.

The *First* biennial report contains no record of what was done in the way of enforcing the factory laws during that period. In view of the fact that no inspectors were granted for these duties, no further explanations for this omission are necessary.

In the *Second* biennial report 36 pages are devoted to the report of the factory inspector, which cover portions of the years 1885 and 1886. This report gives a detailed description of the

condition, number of persons employed, and changes ordered in the various establishments.

Detailed reports were made upon the condition in 410 establishments employing, at the time of inspection, 30,086 persons, of which 5,152, or 17.12 per cent., were female, and 24,934, or 82.88 per cent., were males.

Of the 410 establishments, 378 were reported to be in good sanitary condition, 17 in fair, and 15 in bad condition.

In all, 138 orders for improvements of various kinds were issued. Classified as to their nature, these orders stand as follows: Fire escapes, 85; machinery, 23; sanitary condition, 15; elevators, 6; other parts, 9. The larger proportion of the orders, or 61.60 per cent. of the whole, were thus for the erection of fire escapes. Many inspections were also made and much advice was rendered by the inspector upon which he did not report in detail.

The *Third* biennial report contains a synoptical report of the factory inspectors, covering 124 pages. This report is in form of a tabular statement of establishments inspected, including factories, workshops, and wholesale stores, showing, with considerable detail, the condition of each, the number and nature of the orders issued and enforced, the kind of power used, and the number of employees, classified as to sex; also hotels, boarding houses, etc., giving the condition, location and average number of guests and servants in each case. While no summaries are appended, the report makes a creditable showing. A large number of orders were issued and enforced and the tables are interesting and instructive.

During the period covered by this report 1,109 establishments were thus inspected. These establishments employed 67,655 persons, of which 6,925, or 10.24 per cent. were females, and 60,730, or 89.76 per cent., were males.

As affecting these establishments, 337 orders were issued by the inspectors. Of these, 123 related to machinery, 63 to fire escapes, 71 to elevators, 38 to stairways, 5 to doors, 9 to sanitary conditions, 17 to children under the legal age, and 11 to other violations.

From this, as from the preceding report, it appears that the advice of the inspectors was often sought in the erection and

equipment of factories and public buildings, and that in this and other ways much assistance was rendered which could not be included in detail here.

In the *Fourth* biennial report 145 pages are devoted to factory inspection. Under the head of "Inspection of Factories and Workshops" are given statements of the condition of each establishment inspected, the number of employes (males and females), and the power employed; tables showing by industries and also by localities the amount spent for new factory buildings and improvements in 1888 and 1889; the relative importance of 23 leading branches of industry, based upon the number of employes; by localities the number and nature of accidents occurring, with a recapitulation according to the nature of accidents; statements of orders issued to factories and workshops and to hotels and public halls, etc.; and an index to firms or corporations embraced in this report.

The inspection during these two years embraced 1,902 factories and workshops, 376 hotels, 61 churches, 58 schools and colleges, and 55 halls and other buildings.

About 1,121 orders were issued, of which 687 affected machinery of one kind or another, while the balance are classified as follows: Stairways, 159; elevators, 91; fire escapes, 64; main doors, 42; children under 13 years, 49, and miscellaneous parts, 9.

There were in all 184 accidents reported, of which 35 were fatal. Classified as to the nature of the injuries received, it appears that 7 were to the head, 1 to shoulder, 8 to arms, 15 to hands, 69 to fingers, 22 to legs, 9 to feet; 16 received internal injuries and 2 sustained injuries to the body as a whole.

The improvements on buildings and machinery foot up to \$3,421,425 and \$3,967,185 respectively.

In the 1,902 factories and shops inspected 88,644 persons were employed. Of these 8,601, or 9.70 per cent., were females, and 80,043, or 90.30 per cent., were males.

In the *Fifth* biennial report the reports of the inspectors cover 174 pages. During the period covered by this report 1,965 factories and workshops, 111 hotels, 160 churches, 115 schools, 97 halls, and 16 hospitals were inspected. About 1,100 orders for improving the conditions under which work was carried on

were issued, and 262 accidents were reported. The tabular report of the inspection of factories covers in detail the condition of each plant inspected, as well as showing the number of persons of each sex employed, and the power used. The reports of the inspection of hotels, schools, churches, halls, etc., show their location and condition, together with the changes ordered in each case. There are also tables showing the outlays for new improvements, the total wages paid by localities, the number of accidents, and the number of orders issued, classified in each case as to their nature. An index to firms and correspondents is also appended.

The tables show that during the year \$5,136,140 were expended on new factory buildings, and \$7,656,255 for new machinery.

The total number of persons employed by the establishments inspected was 101,349. Of these 13,810, or 13.63 per cent., were employed in the lumber industries. The next industry in order of importance was foundries and machine shops, with 8,907 persons, or 8.79 per cent. of the total reported.

A summary of the accidents shows that of the 262 reported 30 proved fatal. As to the part of the body injured it is shown that 11 were to the head, 24 to the arms, 24 to the hands, 123 to the fingers, 33 to the legs, 13 to the feet, internal 11, and other injuries numbered 28.

Of the 1,146 orders issued, 218 related to fire escapes, 9 to elevators, 101 to stairways, 546 to safety guards on machinery, 64 to doors, 8 to suction fans, 97 to children under 14 years of age, 1 to vats and 2 to other parts.

The *Sixth* biennial report also includes an account of the work done by the factory inspectors, about 223 pages being devoted to it. The tabular presentations are almost identical in form to those in the two preceding reports, and show the condition, location, orders issued, and persons employed for each establishment; the location, condition and orders issued for each hotel, school, church and other building inspected. The number of factories visited foots up to 1,989 and other buildings to 286. There are also summaries of orders issued, accidents, improvements made, total wages, and an index to firms and correspondents.

The expenditures for new buildings and machinery during the period amounted to \$5,136,140 and \$7,656,252 respectively.

In the factories and shops inspected 110,684 persons were employed. Of these 21,855, or 19.82 per cent., were found in the lumber industry alone.

The number of accidents reported was 309, and of these 44 proved fatal. In detail the injuries with respect to the part of the body affected may be classified as follows: Head, 12; arms, 21; hands, 28; fingers, 28; legs, 34; feet, 10; internal, 16; burns and other injuries, 36.

The orders issued numbered 1,305. Classified as to the part to which they relate they stand as follows: Fire escapes, 270; elevators, 70; stairways, 37; machinery, 505; doors, 86; suction fans, etc., 4; walks, 28; watchmen, 9; watch clocks, 8; alarm bells, 79; children under 14 years, 135; other orders, 74, making a total as above.

For the *Seventh* biennial report, that for 1895-96, more material had been gathered by the inspectors than ever before. Regardless of this, however, less space was devoted to it than in any previous report. In order to keep this report within the usual size it was necessary to exclude a part of the material which had been prepared for it. As the condition of the factories in the state, with respect to the safety of the workmen, had been quite fully presented in former reports, it was thought that that part of the reports of the inspectors which related to this condition in detail might be omitted from the biennial report for that period with less loss than any other part of the work. The presentation of factory inspection was therefore limited to summaries, classified both as to the location of the plants and as to industries.

These summaries, however, contain valuable data. Among other facts they show, for each place inspected and for each industry into which the establishments were classified, the number and size of the buildings used for manufacturing purposes and the material of which constructed; the number of employes classified as to sex, the respective number and power of boilers and engines used, and the cost of the improvements made during the term.

Besides school houses, churches, halls, and other public build-

ings, 2,284 separate factory establishments were covered during this period. This, in number of establishments, exceeds that of any previous period by about 295. The importance of these 2,284 plants is readily seen when it is found that they occupied 7,730 buildings, employed 115,497 persons, of which 13,431, or 11.60 per cent., were females, and utilized 3,476 boilers and 2,527 engines, the power of the boilers being 210,974 horse power. There is also a table showing, by industries, the proportion of males and females.

About 486 formal or written orders for changes or improvements in conditions as regards the health and safety of employes in factories and occupants of other buildings were issued. Of these, 367, or over 75 per cent., affected factories and workshops, and 119, or less than 25 per cent., affected other buildings. One order only was issued for each establishment where the laws were not lived up to. As the number of improvements necessary varied from one to twelve, each written order represented, on the average, nearly four actual changes. In all cases the written order was preceded by a verbal one. All orders were also reported to the bureau immediately upon being issued. Their mere issuing, however, does not always bring about the desired results. In order to be complied with further pressure is necessary. Such pressure as can be made by the inspectors in person, or by frequent inspections for the purpose of ascertaining whether their orders have been complied with, are usually the most effective. To revisit every place within the time necessary for this purpose was, owing to a lack of inspectors, a physical impossibility. This part of the work had therefore to be done through correspondence. Each establishment was reminded of the order by letter and, besides, urged to comply with the same. While practically all notified the bureau that the changes had been made, subsequent inspections revealed, in many cases, that their reports were misleading. That many will not comply with orders until practically compelled to do so is too well known for argument. Constant watchfulness by efficient and earnest inspectors is required in almost every case. Without a strong and competent inspection service the enforcement of the factory laws is, therefore, out of the question.

As said, 486 written orders were made. Of these, 45 related

to fire escapes. The remainder stood as follows: Stairways, 28; doors, 31; alarm and signal bells, 14; machinery and sanitary conditions, 310; children under 14, 45. In this, as all other cases of this kind, machinery, and children unlawfully employed, required the greater part of the attention of the inspectors.

For this period the inspectors reported 157 accidents, of which 21 were fatal. In number this is considerably below that of former periods. The reasons for this are not easily determined. Owing to the dread of personal injury suits and the effect upon public sentiment from the publication of accidents, the employers are steadily becoming more cautious in reporting injuries. The chances, therefore, are that the inspectors failed to discover many of the accidents which occurred. It was also noticed that an unduly large proportion of the accidents were found for the lumber industry. This industry is temporary in character and the most widely scattered in out-of-the-way places, and thus less subjected to inspection. For these reasons it is only natural that such plants should be the ones in which the least protection as to safety is provided. As the ratio of accidents in the lumber industry remained the same as before, while there was a considerable decrease in other industries which are more closely inspected, it is also possible that a part, at least, of the decrease in the number of accidents is due directly to the increased number of safety guards used; or, in other words, to the work of the inspectors. It is only natural to suppose that the results of our work should, at least, have a tendency in this direction. In gathering data of accidents we are at a great disadvantage because there is no law, in this state, which requires employers to report all accidents which occur in their work.

In the *Eighth* biennial report pages 199 to 555 are devoted to the reports of the inspectors, or to the presentation and analysis of same.

This report covers the work of the inspectors from about February the first, 1897, to September first, 1898, which is presented under "General" and "Special" inspections. Under "General" inspection are included the reports upon 2,463 factories and shops, 548 churches, 330 schoolhouses, 69 hotels, and 68 assembly halls. Under "Special" inspection we find a report

upon a special investigation of the employment of children, for which purpose 215 establishments were visited.

The general report upon factories, etc., covers pages 214 to 343 inclusive, and shows for each establishment inspected the number and kinds of buildings occupied, whether the plant was owned or leased, the number of working hours weekly, the number of employes, classified as to sex and age, at the date of inspection and the number when running at its full capacity, the number and condition of fire escapes and stairways, exits and elevators, the condition of machinery and in all sanitary respects, the weeks in operation, the number of accidents, the number of boilers and engines and the power used, the cost of improvements and the total amount paid in wages.

On pages 344 to 353 these facts are summarized as to location of plants and by industries.

Pages 354 to 366 have been devoted to an analysis of the above results.

On pages 367 to 438 there is a complete list, or index, to all factories and workshops visited and included in the presentations. The running number opposite each name in this case corresponds to the running number in the main table opposite the other facts relating to the same establishment, and thus constitutes an index to the two tables.

The summaries of the main tables show that the 2,463 establishments occupied 7,229 buildings, of which 1,186 were three or more stories high; that in 1,843 cases the plant was owned by the parties operating it, and leased in 620 cases; that of the whole number 182 plants were idle at the time of inspection; that 61.9 hours constituted the longest average week's work, and 59.8 hours the shortest; that 2,661 engines and 3,636 boilers with a capacity of 230,786 horse powers, besides 32,195 water and 1,877 electric power were utilized; that the full capacity of the plants required the employment of 133,737 persons; that at the time of inspection 91,238 males and 11,322 females were employed, of which 9,041 were between 14 and 18 years, and that during 1896, \$35,670,640 were paid in wages.

Pages 439 to 450 inclusive give in detail the orders issued which affected factories and workshops. In all 844 such written orders were made during the 19 months covered by the report.

Of these 528 or 62.46 per cent. of the whole related more directly to machinery or parts of same; 150 or 17.70 per cent. were for the dismissal from work of children under 14 years of age employed in violation of the law; 76 or 9.04 per cent. related to elevators, stairways, and openings considered dangerous to workmen; 26 or a trifle over 3 per cent. were for fire escapes; and 64 or 7.72 per cent. related to sanitary or other phases of the conditions of employment.

As in the case of the next preceding report many of these orders include more than one change. Thus the 192 orders issued for guards to fly wheels covered over three hundred such wheels. The 150 orders issued for the discharge of children illegally employed meant the discharge of 327 children from 150 factories. These are only samples. It is usually the case that when one place or machine is left unguarded or unprotected in a shop, other places in the same shop, where protection is needed, are also left exposed. While many establishments thus required several changes, one order was made to cover all.

Such orders, however, are only issued where the violations are great enough to be beyond dispute, and do not imply all that has been done by the inspectors to improve the conditions under which labor is carried on. During the period covered here, many places were noticed in which the conditions were such that, while menacing to the health and safety of the workers, they could not be reached by any of the provisions in the existing laws. Such cases were always investigated. While any action was beyond the authority of the inspectors, they often succeeded in having the situation remedied by frankly explaining the same and offering such suggestions as thought advisable. In this and other ways much was accomplished in the interest of the employes outside of what came under the regular duties of the inspectors.

During the period covered 62 accidents were reported. These occurred in 49 factories, and ten proved fatal. Of the remaining number 35 were sustained to hands or arms, 9 to foot or leg, 2 to the body, and 6 are not classified.

The reports of the inspection of churches, schools, hotels, and halls are found on pages 452 to 489 inclusive, and show in each case and for each building the kind, height, seating capacity, means of escape in case of fire, and many other facts bearing

upon the condition and safety of the buildings. Many of these were also found to lack the necessary equipments for safety as required by law, as may be seen from the fact that 223 orders for improvements were issued. Most of these affected churches and hotels and are classified as follows: Doors to swing out 181, fire-escapes 16, notices of means of escape 26. Adding this number to those already given for factories, it appears at the first visit or "general inspection" during the period, 1,067 formal orders, embracing many times that number of changes or improvements, were made and followed up by the inspectors.

This is briefly what was done in way of enforcing the factory and othelr aws during 1897 and the greater part of 1898.

The work thus begun was, as far as possible, continued during the whole period. Concerning child labor, however, it was soon discovered that more systematic work was necessary in order to carry out the purposes of the laws by which it was regulated. Owing largely to the fact that this bureau has not been equipped with enough inspectors we have found it extremely difficult to keep children under the legal age out of the factories. Instead of decreasing, child labor seemed to become very common. In order to get at the real condition in this respect and thus to show the need of additional legislation, it was determined early in 1898 to take as complete a census as possible of all children 16 years of age and under who were employed at factory work in most of our manufacturing centers. This work was planned and carried out on a broad scale. Each child found at work in the places visited was examined by the inspectors as to age, wages paid, kind of work done, time employed by present and previous employer, of birth, school attendance, occupation of father and home connections in general. In the case of children who appeared younger than the age given or too weak for their duties the investigation was carried to their homes and to the schools they had attended, whenever necessary. This work was continued throughout 1898 and up to about the first of April, 1899. During this time over 5,600 children were examined and about 500 of these dismissed from work, mostly because of being under the legal age. The conditions thus revealed were laid before the legislature of 1899, and more than anything else caused the enactment of laws increasing the number of inspectors from two

to seven and providing for greater restrictions in the employment of children and in the operation of factories generally.

This inquiry into child labor constitutes the "Special Investigation." The returns of about one-half of the children investigated are presented and analyzed in the eighth biennial report and from this the following results are summarized:

"That 215 establishments, classified into twenty-five industries and employing in all 33,805 workers were visited; that of the persons thus employed 3,360 or practically 10 per cent. were under 16 years of age and of these 4.6 per cent. were under 14 years.

"That of those under 16 years 62 per cent. were male and 28 per cent. female;

"That the average weekly wages in the industries covered varied from \$1.96 to \$3.50, with an average for all of \$2.69 per week;

"That 31 per cent. had attended public schools, and 58 per cent. parochial schools, exclusively; that nearly 11 per cent. had attended both of these classes of schools, and that nine children had not attended any school;

"That the average period of attendance was 6.5 school years for public and about six school years for parochial schools;

"That 82 per cent. were born in the United States, and 18 per cent. in foreign countries;

"That 98.5 per cent. were living with one or both parents, and 1.5 per cent. with relatives or boarding;

"That 72 per cent. reported the occupation of the father as that of common laborer, and 28 per cent. that of one or the other of the skilled trades;

"That in 60 per cent. of the cases of the 1,216 children who appeared young or weak and whose homes were visited, the parents owned their home and some other property besides; that of 46 per cent. the father had regular employment; that of 21 per cent. the father was dead, and that of 32 per cent. the father was either sick or out of employment."

As said, these results were not obtained from all the returns as completed. On the whole, however, they may be considered representative. It appears that the results, as obtained from all returns, which will be found in the next report, vary but little, relatively speaking, from those given here.

The following table shows, for each biennial period, the number of establishments included in the inspection, the total number of persons employed by them, the percentage of females, and the number of orders issued:

Years.	No. of establishments.	No. of male employees.	No. of females employees	Total persons employed.	Percentage of females.	No. of orders issued.
1885-1886	410	24,831	5,152	30,086	17.12	138
1887-1888	1,103	60,730	6,925	67,655	10.24	337
1889-1890	1,962	80,043	8,601	88,644	9.70	1,101
1891-1892	1,965	91,559	9,790	101,349	9.66	1,116
1893-1894	1,831	98,917	11,737	110,654	10.60	1,305
1895-1896	2,284	102,066	13,431	115,497	11.60	4-6
1897-1898	2,463	119,006	14,711	133,717	11.01	1,217

By establishments in above table is, of course, meant factories and workshops, hotels, schools and other public buildings of this kind being excluded from this table. In considering the establishments and the persons employed it will be noticed that there is a steady increase in both from the first period included to the last. As to the proportion of female workers, there appears on the whole to have been perhaps a slight decrease, particularly if the first period is included. This period, however, is hardly representative. There was at that time only one inspector and he confined his work mostly to the larger cities, where, for many reasons, the proportion of females is much greater than in smaller places. The figures for 1885 and 1886 are therefore not a fair basis for comparisons as against the figures for the other periods. Omitting the first period, there appears from that time on first a slight decrease and then in 1895-96 a slight increase, with again a decrease in the last period in the proportion of female workers. The total persons employed as given in above table is the greatest number employed, while the totals in the reports are simply the average number. This accounts for the fact that the numbers in the table are somewhat greater.

The orders for changes or for the improvements in the conditions under which work was carried on increased in number very rapidly during the first three periods, but with the exception of 1895-96 has kept fairly even since. During the last two periods, however, as already explained, the actual number of orders is much greater than indicated in the table because a large proportion of those given there represent more than one order or change. In the following table the orders have been classified according to their nature, or the parts or objects affected.

Classification of orders issued.

Years.	Machin'ry, etc.	Fire escapes.	Elevators.	Stairways, etc.	Doors	Children, sanitary cond., etc.	Total.
1885-1886....	23	85	6	.....	.....	24	138
1887-1888....	123	63	71	38	5	37	337
1889-1890....	657	64	91	159	42	58	1,121
1891-1892....	546	218	9	101	64	101	1,146
1893-1894....	503	270	70	37	96	337	1,305
1895-1896....	314	45	10	28	31	58	486
1897-18.8....	528	26	76	32	16	389	1,217

The above table shows, for the periods covered, the number of orders, in each case, which affected or required guards or protection around dangerous machinery, the erection of fire-escapes, the repair of unsafe elevators, the guarding or repair of defective or dangerous stairways or other openings, the changing of doors so as to swing outward, the dismissal of children illegally employed, and many other conditions. As a whole the table is interesting. By far the larger proportion of the orders affected machinery. That this should be so is also natural. Under the law in this state all dangerous machinery must be guarded or protected in some way. There is a great deal of such machinery in use and much of it is frequently changed or replaced. Guards are also often removed for other reasons, or without reasons, even by the workmen themselves, who are running the risk of being injured thereby. This necessitates constant watchfulness on the part of the inspectors and this in turn means more orders. Next to machinery comes fire-escapes. That high buildings with many occupants should be provided with adequate means of escape in case of fire is of the greatest importance. A large number of such escapes have also from time to time been erected. Elevators and stairways need watching and have received attention, and many main doors, or exits, have been made to swing outward. Of late years, in particular, many children under 14 years of age have been dismissed from work and this together with other changes makes a respectable showing.

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PART III.

CHILD LABOR.

CHILD LABOR.

CHILD LABOR IN THE UNITED STATES.

The growth of child labor in the United States embraces a period covering but few years. While it is true that children have been employed in different occupations more or less since the formation of the Union, yet it is only in the last thirty-five years or so that it has assumed such magnitude and been attended with such serious results as to warrant the attention which it is receiving today at hands of the legislatures of those states in which it has grown so rapidly.

With the growth of large cities and the building up of great manufacturing centers has come an enormous increase in the amount of child labor utilized in factories and that other form of employment, whose development has kept pace with that of the American factory system, and whose evils are even more destructive to the young children employed, the tenement workshops, otherwise known as "sweatshops." Statistics show also a large increase along various other lines of industry. According to the census of 1870, 1 out of every 17 workers was under 15 years old. In 1880, according to the same authority, 1 out of every 15 was under that age, showing a falling off in the number of young children employed, the result largely of legislative regulation.

While much good has been accomplished in recent years by the legislation passed by the several states in the endeavor to wipe out the evils resulting from the employment of children, yet a vast amount of attention must yet be given to the question, and in most states a better enforcement of the laws already enacted is necessary if the youth of our laboring classes are to be allowed to grow up to vigorous manhood and womanhood. In

fact, I firmly believe that, if the laws to be found upon the statute books of the different states today, bearing upon this subject, were energetically enforced, there would be need for but little further legislation, except as the changing circumstances of industry require from time to time. The laxity in the proper application of the law is due in part to the perverted condition of politics today, by the workings of which incompetent officials are too often appointed to positions whose duties they cannot intelligently discharge, and who make little or no effort to punish the infringement of those laws which it is their duty to enforce. I do not desire to be understood as stating that this is so in all cases, but in a great many it is.

Nor do I desire to state that injurious consequences follow the employment of children under all circumstances, for there are a great many who are large utilizers of youthful labor who realize from the standpoint of common sense that robust, intelligent, truthful men and women can only grow from boys and girls whose youthful vitality has not been sapped and who have been surrounded by a wholesome, elevating atmosphere, and treat their young employees accordingly. On the other hand there are others, equally large employers of this kind of labor, who have been and are today guilty of the grossest inhumanity toward those poor unfortunate children who, by circumstances over which they have no control, are forced to do the severest labor, surrounded by conditions fatal to the physical and moral development and welfare of the youth of both sexes.

From the reports of factory inspectors, and they constitute the principal source of information, come tales of cruel neglect and maltreatment of defenseless working children by the proprietors of workshops that would read well beside the history of the early days of English factory life when mere babes were bartered for and sold into bondage as pitiless and blighting as that which once cursed the existence of the dusky African, the bondage of the unregulated factory system.

Mere infants, poorly clad and ill fed, whose wan, pale faces and weak, diseased bodies tell, more truthfully than words can, of the harsh treatment to which they have been subjected, are crowded into unsafe and unwholesome rooms whose floors, in most cases, are covered with filth and uncared for refuse, whose

atmosphere is one perpetual stench of sickening disease-breeding odors, to which vulgarity, blasphemy and indecency add their polluting influence, and compelled to do work too exacting and severe for their feeble strength. For many hours during the day, part of which nature intended for youthful games and sports, with but a brief period given to the mid-day meal, with no intervals for rest and recreation, fearing to pause even for a moment to straighten the aching body lest, being detected by the sharp eyes of the brutal overseer, an opportunity would be given for the imposition of a fine for loitering at work, the small toiler is forced to labor while the little fingers become numb, the feet weary and the whole body cramped and aching from the unnatural and heavy strain placed upon it.

In the South especially the condition of working children is deplorable. An aggressive humane sentiment seems to be lacking. Statistics show us that in some corporations as high as 20% of the whole number employed are under 13 years.

Not only is the work which they are called upon to do, too arduous and difficult for the child to perform, but in a great many cases he or she is required to do it around unguarded and dangerous machinery, which only too often demands, as the price of this criminal neglect on the part of the employer, the limb or life of the unfortunate worker. With no pleasant memories of home to soothe when the toil of the day is o'er, no thoughts of a brighter future possible to cheer during the long hours of weary drudgery, the sad little life is spent amid scenes and temptations that stimulate and encourage the growth of all that is base, depraving and fatal to the development of that which is elevating and make for true character and nobility.

According to a New Jersey report thousands of children in that state know no change but from the workshop to the bed, from the bed to the workshop. From the Ohio report of 1887 we get the following: "Child labor is terrible. Children are crowded into workshops at 12 years of age. When they reach manhood their places are filled with other boys and they are thrown out of work." In New York in 1895 the Reinhardt committee reported in part thus: "The committee stamps the employment of children under the statutory age as one of the most expensive evils now existing in the city of New York, and

an evil which is a constant and grave menace to the welfare of its people. Parents and mercenary and corrupt notaries alike connive at the employment of children under the statutory age."

Wee tots, whose speech is not yet free from the baby lisps, are thrown into the company and society of those who have become hardened and depraved through long years of contact with the worse forms of crime and vice. Under such circumstances and enveloped by such an atmosphere they soon grow into the ways and habits of those about them, and acquire at a tender age an extensive knowledge and insight into crime and the worse forms of moral depravity, emerging into manhood and womanhood with body and mind deformed and diseased and in no way prepared or capable of fulfilling the duties devolving upon good citizens.

In cases, not a few, the sanitary condition of factories were found to be extremely unhealthy. In many a single closet was used in common by the old and young of both sexes, thus allowing opportunity for improper conversation and conduct. Little ones were found who, with innocent candor, told of improper liberties taken with the female operatives by the overseer or those in charge of the work-room, while indecency in its vilest form, on the part of the operatives themselves, was permitted to pass unchecked.

In most lines of industry in which child labor is to be found, and in our large manufacturing centers especially, are these conditions to be met with surrounding and shaping the lives of working children.

While the results upon the physical welfare of the child varies with the nature and kind of work engaged upon yet the consequences flowing from unhealthy, moral environments is about the same in all work in which the labor of children is permitted to go on unregulated.

In the making of tinware, type, corset-steel, umbrella frames and toys a large percentage of the workers are small children, whose deft fingers and swift feet are preferred to those of adults, especially as they perform the same kind of work at far less expense. It is among these classes of workers that accidents, many of them proving fatal, most frequently occur. This is certainly true in the manufacture of tinware, as it has been au-

thoritatively stated that it is not an uncommon thing to find the greater number of the little workers with hands or legs or some other part of the body injured as a result of working around unguarded machinery and dangerous places. In the manufacture of type, and many other employments, the deadly effect of the work is made manifest in the impairment of the health of the children, the majority of whom become pale, sickly, weak creatures and remain so during life.

In the department stores of our large cities child labor is largely utilized. For many long hours during the day the little ones are kept busy, with little or no time to rest the tired feet or ease the aching body. Upon the young girls especially the work leaves its heavy impress. The severe strain from long hours of continuous standing soon makes itself felt in the failing health of the child, stunting its development and rendering it unfit to assume the duties of wife or mother. A cheering sign in the betterment of their condition is the attention which some of the states are giving to the department store working children. In some states seats for females are made compulsory, affording a convenient means of resting when not employed.

But the injurious results of child labor is not limited to factories or department stores alone, for there is another form of industry, already mentioned, in which boys and girls of all ages form the major part of the working force and in which are to be found evils even more blighting than those which make life a burden to the poor victim of the factory. The "sweatshops," which have increased so rapidly during the past few years, are doubtless the offsprings of the form of industry which existed previous to the advent of machinery and its utilization in connection with steam and water power, when manufacturing was carried on in the home. These shops are generally to be found located in tenement buildings, in a great many cases old and unsafe, where in close, dark and unventilated rooms, usually the living rooms of the family, children are kept busy upon piece work, the contract for which the proprietor has secured from some manufacturing concern. In some shops the working force is limited to the members of the family, while in others large numbers of outsiders are employed.

All are at work, from the parents down to the babe of four and

fire, whose unwashed hands and face denote extreme laxity in the application of soap and water. Early and late, with but time sufficient allowed to consume the plainest of food, prepared amid the dust and dirt of the work-room, and snatch a few hours of sleep, with play time a thing unthought of, every one is obliged to work for a miserable pittance, hardly sufficient to supply the bare necessities of life, much less any of its comforts or pleasures. No effort is made toward the comfort, no thought given to the physical or moral well being and no attention paid to the preparation of the child to meet the responsibilities of the future. Amid scenes and influences that debase and deaden the growth of those qualities of nobility, uprightness and virtue with which the Creator has endowed the human race, the youthful energy is expended.

Of the many kinds of work performed that upon tobacco is, I believe, the most injurious. The tobacco leaf is scattered in little heaps over the floors, and even upon the beds and tables. Near these piles, with face and hands begrimed with the dirt from the tobacco, hair uncombed and clothes, if the term can be made to include such rags, torn and tattered, exposing the unclean skin beneath, are to be found the smaller members of the family, busily stripping the tobacco for the older members who make it into cigars.

The dust from the leaf pollutes the atmosphere everywhere, is breathed into the young, delicate lungs, finds its way, through the food, into the other organs of the body, weakening and shattering the entire system for life.

The deadly effect of this employment is manifested in the pale face, the weak, diseased bodies and impaired health of the child, who, if he lives to reach the years of manhood, finds himself a physical wreck from the poisonous nicotine with which his system has been saturated.

A large part of the children working in the various industries in the United State are illiterate, and lack even the elementary rudiments of a common school education. In fact, many have never beheld even the inside of a school house, much less attend school, while others would scarcely know what the name signified, if by chance they heard it. But few ever get the opportunity to finish more than the primary department before being

taken from school and put to work. Once started to work all chance of school ceases for the child, who from that time on, becomes a wage earner, whose miserable pittance goes to swell the aggregate earnings of the family. It has been authoritatively stated that 50,000 children of school age did not attend school in 1892 in New York City, a large per cent. of these being the children of working people. What was true in New York was no doubt true in other large manufacturing cities, the number, of course, varying with the size of the laboring population.

While the responsibility for the almost inconceivable conditions surrounding working children, rests largely upon the employer who employs, yet upon the general public which, by its desire for cheap products, encourages their employment must also rest part of the blame. The moral disapproval and condemnation of the intelligent public, an aggressive interest in the welfare of toiling children would go a great ways toward the suppression of illegitimate child labor.

Neither are the parents themselves free from responsibility. Without a moment's consideration given to the duty which they owe to their offspring, careless of his welfare and preparation to meet future duties, there are parents who bring children into the world, actuated seemingly by a desire to rear them to the earning age, with as little bother and expense as possible. At the tender age of five, and in many cases earlier, the little tot is set to work under the impression, in most instances, that the earnings of the father will be increased thereby. This is a mistaken idea and one easily refuted by practical experience, which shows us that the family income is not increased by the toil of small children but invariably reaches a certain standard which would be attained by the head of the household if the children should not be allowed to work in the entire class to which the family belongs. Statistics prove that the employment of children reduces, rather than increases, the family income. This has been conclusively proven to be true by Prof. Bemis in regard to textile industries. It is also true in metal industries.

In a great many cases, the revenue derived by the parents from this source is used to maintain the father in idleness or, worse still, finds its way into the pockets of the saloon-keeper or gambler.

While it is true that a great many children are forced through poverty to seek employment at an early age, yet it is true that in a large number of cases they are compelled to do so through the greed of the parents who wish to secure, as early as possible, the mite which they are capable of earning. Then, too, even though the straightened circumstances of the family will not admit of the child being kept at school yet, this in itself is really no excuse, as the different states have made ample provisions for this contingency. The parents need only to make known the situation to be aided.

It is the duty of a government to do this, to see that its children are properly educated and surrounded by those influences that bring out and promote the growth of those qualities that make for good citizenship. It has been said by a great and good man that the children are the property of the state. If that is so, and I believe but few, if any, will deny it, the state may well afford to use some of its energy and wealth in promoting their education and training them for the active duties of life. Said another writer: "The future is builded upon the intelligence of the coming generations. Stultify their powers and disastrous results will ensue." This great truth has been realized by the leading civilized powers of the world and they are throwing about their children every safeguard and protection which governmental prerogative will permit.

In France the employment of males under 12 and females under 16 years of age is prohibited, except in certain kinds of labor, where boys between 10 and 12 years may be employed on condition, however, that the working hours shall not exceed 6 daily. Night work is rigidly forbidden to boys and girls under certain ages.

In Austria-Hungary the educational laws require that children under 10 years shall in no case be allowed to work in factories and children over 10 and under 12, only with the consent of the authorities.

This consent is given only when regular attendance at school can be combined with factory employment or when arrangements are made by the employer for the education of the children by establishing schools in accordance with the regulations of the educational authorities. The number of hours of daily

labor for children over 12, but under 14 years of age, in factories is limited to 8. For those under 16 but over 14 the hours of labor are restricted to 10. No child under 16 years can be employed in any occupation injurious to his health or detrimental to his physical development.

In the solution of the child labor question a broad field is open to philanthropic and benevolent individuals and organizations. Annually large sums of American money find their way into heathen lands in the effort to spread the gospel among the unenlightened, while here at home is a vast army of young Americans growing up to manhood amid neglect and influences that tend to make for evil, with little or no attempt at organized effort, on the part of our people, in their behalf. Let our people take an enthusiastic hold of this question, let them interest themselves heartily in the life and surroundings of working children, and this question would be a great way toward solution.

The employment of small children does not only effect the child, but others as well. Capable of doing the same work for less pay he takes the place of grown-up men, often depriving the head of a household of the means of supporting his family. This, unless checked, means the gradual extinction of the adult operative. The head of the family, unable to obtain work, is obliged to remain at home and do the housework, while wife and children toil. Another of the results of this evil is the scarcity of domestic help. This is one of the problems confronting the housekeeper of today. Enabled to obtain employment in factories and elsewhere at an earlier age than in families the girls get little or no training in household duties. Consequently when they arrive at an age suitable for housework they have little or no desire to change their employment or, if they did, are not prepared to perform the new duties in a satisfactory manner.

Let those today who are bewailing the lack of suitable domestic help interest themselves more deeply in the well-being of working girls, use their influence in the enactment and proper enforcement of laws for their protection, thus preventing their illegitimate employment, and the question of scarcity in domestic help will be in a great measure solved.

To give a complete history of the legislation enacted in the

United States bearing upon the different phases of child labor would, indeed, be a lengthy task and one very hard of completion within the limits of this article.

Unlike England, where the general government maintains control of the matter, here the question rests with each state, independent of the national government. Some states are in advance of others, possessing laws covering about every employment in which the labor of children is utilized. Others have enactments of very limited scope and very ineffective in their operation. Of late years there has been a tendency shown by some of the more important manufacturing states to seek uniformity in the legislation passed. This is shown by the fact that some states have enacted, almost verbatim, the laws of another which have proven a success.

Today the majority of states have organized Bureaus of Labor, and it is to be confidently hoped that in the near future every state in the Union will be thus supplied.

Connecticut and Massachusetts were the first to grapple with the evil and the contest then begun and continued up to the present day has given to each of those states a very broad and comprehensive series of enactments regulating the employment of children.

Massachusetts in 1836 passed a law bearing upon this kind of labor. It was not very energetically enforced and it was not until 1866 that she enacted the first effective measure. Since then she has made rapid strides in throwing the protecting arm of state regulation about child labor and in eradicating its withering effects, and stands today as a model for the other states of the Union for legislation upon this important question. As a result of this thorough code of laws child labor has enormously decreased. From 1875 to 1885, according to Carroll D. Wright, the number of children between the ages of 10 and 14 was reduced from 8,000 to 3,000. From 1882 to 1890 the number was reduced 70 per cent.

Connecticut passed her first law in 1842 and has followed it by others more stringent and effective in subduing the evil which leaves such a fatal impress upon the poor children who are compelled to labor for their livelihood.

New York, Pennsylvania and other states followed Massa-

chusetts and Connecticut in legislation upon this subject, so that in every important manufacturing state in the Union laws have been passed regulating child labor. The laws of New York are practically the same as those of Wisconsin prohibiting labor for children under 14 years. The New York law of 1889 renders it necessary for children to be able to read and write. This law has been marvelously successful in promoting and improving the education of minors. Illinois has a law prohibiting absolutely the employment of children under 14 years of age in any manufacturing establishment, factory or workshop, mercantile institution, store, office or laundry. The permit system by inspectors has been abolished.

To give in full the many provisions of the many acts enacted by the different states is unnecessary. The following are a few common to the more important laws placed upon the statute books:

- a. Work prohibited to children under certain ages. (Varies in different states.)
- b. A certain amount of schooling necessary to secure employment.
- c. A certificate from the teacher showing that the law has been obeyed, required.
- d. Certain rules of sanitation prescribed.
- e. Seats for females required.
- f. Fire escapes provided for.
- g. The proper guarding of dangerous machinery made necessary.
- h. Employers to keep a record of the ages of the children employed.
- i. Labor Bureaus organized.
- j. Inspectors arranged for to enforce the laws.

These in brief are the more important phases of child labor legislation enacted throughout the states. That this legislation has been successful in a marked degree in removing some of the injurious consequences resulting from the employment of children cannot be denied. The number employed has enormously decreased, while the increased attendance at school on the part of the children is most gratifying. On the whole the results so far accomplished more than demonstrate the utility of govern-

mental supervision of labor. But much remains yet to be done. In many states the laws already passed must be displaced by others more stringent, while in others better enforcement of those now existing is all that is required. It is to be most earnestly hoped that, as time rolls on and one by one the many questions confronting our people come up for solution, this most vital problem (the care and protection of working children) will receive its just measure of their attention and consideration.

CHILD LABOR IN ENGLAND.

For the most complete and authentic history of child labor, its evils and the most effective remedial measures applied to eradicate those evils we must turn to England. There the system had its origin. There its pernicious results were first experienced and felt and there the first steps taken in remedial legislation.

One hundred years ago the condition of the laboring children of England was a pitiful one, indeed. In all lines of industry their feeble strength was utilized. Down into the dark, dismal coal mines they were taken and there shut out from the pure sunshine and the beauty of nature, were harnessed to small carts and forced to haul the coal, while a brutal overseer stood over them ready to bestow a blow or kick upon the delicate bodies of those who, tired and weary, sought to rest. In the work of cleaning chimneys they were used. Up the narrow, suffocating chimney they were made to crawl at the risk of life or limb. If from exhaustion they lagged, a burning candle was often used to accelerate the movement upward. History tells us that many little ones lost their lives as a result of this cruel employment. Although the English have always been a manufacturing people, yet previous to the year 1769, which marks the advent of machinery and the application of steam and water power as controlling factors in the industrial world, the blighting influence of child labor in the factory, its effect economic and sociologic, had not been materially felt.

The work then was performed in the home. The members of the family were the operatives and, while it is true that this form of employment was not entirely free from injurious consequences, yet few of the demoralizing results, which flow from the indiscriminate, I was tempted to say criminal, employment of the labor of both child and adult, which has characterized from the beginning the unregulated factory system, were experienced previous to the year mentioned.

Under the system of home-manufacturing there was no crowding of young and old into loathsome, disease-breeding rooms, and no mingling of innocent youth irrespective of age and sex with the vice-hardened and criminal. With the advent of machinery in improved form, however, existing conditions were changed.

The impetus given to industrial activity by the invention of machinery and its utilization in conjunction with steam and water power, resulted in the erection of large manufacturing plants and the employment of thousands of operatives. The machine made product was cheaper than the home made article and consequently its consumption was greater which, coupled with the demands of war, abnormally increased manufactories.

At first, no doubt, the great percentage of operatives in factories were adults and, of course, more able to stand the work than children, and not so susceptible to its hardships. The cumbersome nature of the original machinery rendered its operation by child labor, in most instances, a physical impossibility. But with the perfection of the original machine, the constant addition of new and improved devices, simplifying and rendering its operation less difficult, came an enormous increase in the number of small children employed and an increase in the number of abuses to which child labor was subject.

Avaricious employers, recognizing the ability of the child, with the aid of these improved mechanical arrangements to perform the labor of adults at a greatly reduced expense, filled their shops with the little ones, forcing men out of employment or the acceptance upon them of a greatly reduced wage. Stopping not to consider the serious consequences likely to follow from such a practice, they forced mere infants into employment destructive alike to physical and moral growth. The number of children

was enormous compared with the number of adults employed. In 1816 it was estimated that 14 out of every 23 factory-hands were under eighteen years of age. According to the parliamentary report of 1833 it was shown that 7 out of every 17 were under eighteen, while in 1839 the number was about 19 out of every 41.

The fatal results of this inhuman system of employing young children were fearfully manifest in the stunted intellect, the deformed physique and depraved moral being of its victims. Words are inadequate to picture the cruelties, the heartlessness, the utter absence of humanity and the moral degradation and misery which followed the employment of child labor in factories and elsewhere in England previous to its regulation by parliament. At best it would be but a faint glimpse,—such as one might get of the boundless universe on a dark night by the flickering rays of the candle,—of the conditions as they existed. The pages of history which reveal to us the sad story of the poor African are not darker than the pages that chronicle the life of the working child with its sufferings and hardships.

The people were slow to realize the dangers which threaten the stability of the government as a result of the arduous labor exacted from immature working children. A nation must depend upon its people for its permanency and strength. Anything which undermines the vitality of the people, robs the nation of just so much of its vital force and power. With nations, as with individuals, no attention is given to the prevention of an evil and no remedy is applied until after disastrous consequences have been felt. This was the case with England in her treatment of the child labor question.

Says Horace Mann: "It is obvious that children of 10, 12 and 14 years of age may be steadily worked in our manufactories without any schooling, and that this cruel deprivation may be persevered in for years and yet no dangerous outbreak may occur to arouse the public mind from its guilty slumbers. The retribution waits the full completion of the offense. But when they go, blunted in morals, blind in intellect, from the sphere of childhood to full political sovereignty, there will come a terrible retribution."

For England retribution came when crime began to increase

among the laboring classes and the manufacturing and mining districts were no longer able to supply their usual quota of able-bodied men for the army, and army officials began to complain of the inferior size and strength of the recruits furnished. Then she began to look about for the cause, and having found it, to apply the remedy.

In 1802 Sir Robert Peel, Sr., the pioneer of labor legislation, called the attention of the public to these rapidly increasing evils, resulting from the unregulated employment of children, and secured the enactment of a law ameliorating in a limited sense the condition of child labor in cotton and woolen mills.

While the results accomplished by this legislation were very meager indeed, yet, considering the limited scope of the measure itself it demonstrated the efficacy of restrictive legislation which the alarming conditions so urgently required. It was but the beginning of an elaborate series of legislative enactments which have rooted out many of the dark evils which surrounded the early employment of factory labor and given England today the proud distinction of having the best regulated factory system in the world. This measure did not meet with the approval of manufacturers. They fought it bitterly as an abridgement of their rights. Their opposition, coupled with the changed circumstances of industry, rendered it inoperative although it was not formally abolished until about seventy-six years later.

Conditions again became indescribable. Even less regard than before was given to the wretched condition of the unprotected toiler. Unchecked in his cruel policy, the conscienceless manufacturer again crowded his ill-lighted and foul smelling shops with young and tender children, driving them to toil far beyond their strength and at the imminent risk of life and limb from unguarded machinery and unsafe buildings. The condition of working children in other occupations was equally as horrible.

This terrible state of affairs continued for about thirteen years before it was again made the subject of legislative inquiry and action. In 1815 the attention of Parliament was for the second time called to the matter by Sir Robert Peel, and

in the same year a "Committee of Inquiry" was appointed to investigate.

The result of this investigation was the enactment of a law in 1819 forbidding the employment of children under nine years of age and limiting the hours of labor for those under sixteen to twelve a day with one hour and a half out for meals.

In 1825 Sir John Cam Hobhouse secured the passage of a measure which, among other provisions, contained one shortening the hours of work on Saturdays.

The act of 1831 prohibited night work to all between the ages of nine and twenty-one, and restricted the hours of labor for persons under eighteen years old to twelve hours a day except on Saturdays, when it was limited to nine.

Following shortly after the act of 1831 Mr. M. T. Sadler, a very able man, secured the appointment of another committee. This committee, of which Mr. Sadler was chairman, made a very thorough investigation of the conditions surrounding factory labor. A number of witnesses from among the factory operatives were examined and their testimony embraced in the report of the committee which disclosed a horrible state of affairs attending the employment of labor and urged the necessity for further remedial legislation. While the efforts of the committee failed of immediate fruition, yet its effect was materially felt upon future legislation.

Lord Ashley, who took up the work where Mr. Sadler left off, in 1833 introduced and carried to passage a new measure more comprehensive in its applicability than any other measure thus far enacted. Under this act it was made unlawful to employ any child under nine years of age. Eight hours constituted a day's work for those under thirteen years, while for those under eighteen working in worsted, hemp and linen factories, the hours of daily labor were limited not to exceed twelve. No one under the age of eighteen was permitted to work at night. Daily attendance at school was required and a certain number of holidays during the year provided for. Surgical certificates were made requisite, and four factory inspectors were arranged for to carry out the provisions of the act.

This act, although a great step in advance of former legisla-

tion along this line, failed to meet the great expectations of its supporters.

In 1844 the passage of an act was secured reducing the hours of labor for children between the ages of eight and twelve to six and one-half daily, to be performed in the forenoon or afternoon but not in both. The age at which a child might be employed was reduced to eight years. Surgeons were to be appointed whose duty it was to certify to the age of the working child. A needful provision also provided for the guarding of dangerous machinery and for improving the sanitary condition of factories. Certificates of school attendance were made requisite, the school fees being charged up to the employer.

In 1846 the struggle for a Ten Hour Bill was resumed. Early in that year a measure was introduced but was defeated. The next year the bill was again introduced and carried to passage. By this measure the hours of labor for children under thirteen years were reduced to five and those under eighteen to ten hours a day. Great results were confidently expected from the operation of this act, which was considered a great stride onward in the direction of proper labor legislation. But in this the friends of the bill were disappointed as it was seriously defective in that it did not prevent the introduction of the Relay system by the factory owners.

While it may be truthfully said that legislation regulating the employment of labor, and especially child labor, up to this time had not proven a success owing to the bitter opposition of those who, while they were powerless to frame the provisions of the different bills to suit themselves yet were able to render their operation defective by securing the omission of some essential feature necessary to the proper enforcement of the acts, yet it must be acknowledged that the condition of the laborer had gradually improved as a result of the agitation incident to the various measures enacted and the way paved for more stringent legislation along this line.

In the year 1861 a second commission was appointed, the members of which for a period covering about four years made an exhaustive study of conditions incident to the employment of child labor. The result of this investigation, which was a terrible exposure of the hardships and dangers surrounding

working children, was the enactment of the factory acts of 1864 and 1867. By these acts the protecting arm of the law was extended to those engaged in employments hitherto passed by in former legislation or believed to be outside the sphere of governmental interference.

By the act of 1874 the age at which a child might be employed for a full day was raised to fourteen years and several changes made concerning the requisite attendance at school, which were decided gains in the direction of the complete eradication of those blighting evils which for so many years cursed the employment of children and paved the way for the grand measure of 1878 which consolidated and amended the existing laws relating to labor and made their enforcement more certain and satisfactory.

By this measure the employment of children under ten was prohibited, and for those under fourteen placed at half-time, to be performed in the morning or evening but not in both. Those over fourteen and under eighteen could be employed between the hours of 6 and 6 or 7 and 7, two hours being allowed for meals, and work on Saturdays ceasing at half past one. Proper provisions were made for improved sanitation and the guarding of dangerous places against accidents. Medical certificates were required from all under sixteen years of age, employers were obliged to obtain weekly certificates showing the necessary school attendance of the children employed and a sufficient number of inspectors were provided for to carry into effect the provisions of the act.

This act, while it was the most comprehensive of all legislation up to this time, was deficient in some particulars and especially in that it did not provide needed regulation covering the labor of children in homes. Under this system of employment great evils had sprung up since the birth of the factory system and in a great measure attributable to that system. Here "sweating" had its origin and flourished, inflicting untold misery upon its helpless victims who, driven by necessity, were compelled to toil for wages barely sufficient to supply the coarsest food and clothing and under conditions dangerous alike to health and morals.

In 1891 a bill was passed in parliament which remedied to a great degree the defects in the act of 1878, and gave greater protection to working children. The operation and enforcement of the law was made more effective and sure, more stringent provisions were provided for the fencing of dangerous machinery, and the minimum age at which a child might be employed was raised from ten to eleven years.

This in brief is the history of legislation in England in reference to child labor in factories. Its growth was retarded by violent opposition and many discouragements resulting from the failure of some of the measures, especially the earlier ones, to fulfill the expectations of their framers and supporters. By constant agitation and ceaseless effort alone on the part of the friends of labor was success finally achieved and the long struggle crowned by legislation which has given to old England the best factory system, made her factory laborers the best cared for of any in the whole world, and settled for all time the right of the state to regulate the employment of labor.

Not only have legislative enactments proven a blessing and a benefit to the employed, but also to the employer, who as a result is enabled to supply his work rooms with laborers of a higher order of intelligence and manhood. So beneficial have been the returns of this legislation to the manufacturer alone that many of its most ardent friends are numbered among those who are large employers of factory help.

CHILD LABOR IN WISCONSIN.

Among those states which are making an earnest effort to ~~ex-~~
~~terminate~~ the evils of child labor stands Wisconsin. While its
legislation touching upon this matter is of comparatively recent
growth, yet it has been quite rapid and comprehensive.

During the last quarter of a century Wisconsin has made
giant strides in manufacturing. According to the last census
report from 1885 to 1895, a period of ten years, the value of
manufacturing plants had increased nearly one hundred per
cent., while in 1895 the value of manufactured products were
over one hundred million in excess of 1885. With this increase
in the number and value of industrial establishments in the
state has also come a great increase in the number of laborers
employed (especially young children). In 1885 the number of
laborers was 71,185, while in 1895, 118,117 were employed.

The history of labor reveals to us the fact that the increase
in the ranks of working children has been greater than the in-
crease in the number of adult laborers. This is due largely to
the desire on the part of the employer to cheapen the cost of
labor and thereby place his product upon the market at the
lowest possible expense. Thus we find in our state an amazing
increase among our youthful employees during the last quar-
ter of a century.

Here is the home of the immigrant. Within our borders
flack annually thousands, who tiring of oppression, leave the
fatherland and seek liberty and a home within our great and
prosperous state. A part of this vast multitude seek the farm-
ing regions, while by far the greater part settle in manufactur-
ing centers and find employment in factories, stores, etc. Com-
ing from lands where little, if any, encouragement is given to
the poor to rise above their lowly condition, and life one inces-
sant struggle for existence under oppressive taxation laws, it is
natural that their first thought and effort should be given to
obtaining work, as the majority of them are very poor, possess-
ing barely sufficient means to defray their passage here. Thus
many families are found in which the entire number are at

work in the factory or elsewhere. The parents, not having had in most instances, the privilege of attending school and obtaining a good education themselves, give little or no thought to the educational welfare and advancement of their children, actuated seemingly by the thought that the child should not be better educated than the parents. An illogical thought surely and one not in harmony with America's settled principle of education for her boys and girls.

In 1883, the industrial growth of the state having assumed such vast proportions and the abuses of labor having become so flagrant, the necessity for having some kind of governmental regulation over the matter became apparent to the minds of our people, and a bill was introduced in the legislature and passed, creating what is now known as the Bureau of Labor and Industrial Statistics. The duty of this Bureau was to collect and collate information bearing upon labor and industrial activity, and see to the enforcement of certain laws relative thereto.

Through this medium intelligent information was obtained concerning labor and the conditions surrounding the working classes. While the work of the Bureau has been hampered by an insufficient office force and the hostility of manufacturers, yet enough has been accomplished to fully justify the action of the legislature in creating it. In the older manufacturing cities of the state conditions, surrounding working children, were found to exist as horrible as any which cursed the life of the factory hands of the older manufacturing states of our union. No attention was given to the age or sex of the child or nature of the work performed, the only requirement being the physical capability of the child to do the work given it.

At the outset the Bureau had but two inspectors and with this small force to cover the entire state there were many violations of the laws enacted for the protection of working children. Manufacturers, realizing the small danger of detection, violated the laws as often as occasion required to subserve their own ends. Then again, often, the laws were broken by employers who were ignorant of the law, not having been visited by an inspector and consequently not having had the statute called to their attention. This, of course, is no reason for not obeying a law which it is a man's duty to know, yet rush

of business may sometimes be justly urged in extenuation. One large employer of child labor in the city of Racine stated to an employee, of this Bureau recently, that he had been in business in that city for the last twenty years without being visited by an inspector. This impediment in the good work was in a great measure removed by the last legislature by the passage of an act providing for the appointment of additional inspectors. These have been appointed and have greatly facilitated the work of this office in regard to child labor. Inspections are more comprehensive and thorough and are instrumental in bringing to light many flagrant violations of the law which had hitherto escaped detection. Some factories have been found in which the smoke and gas was so thick that it was almost impossible for the workers to see each other. Others with dangerous machinery unprotected, imperfect sanitation and inadequate fire protection; still others in which no attention was given to the age of the child, instances being found of children of 9 and 10 being employed. From 14 daily reports, selected at random from a large bunch of reports from one inspector alone, the following table has been compiled as a sample of the frequency with which the law has been violated with respect to employment of children:

Table giving number and age of children employed contrary to law, gathered from 14 daily reports from one inspector.

	9 years of age.	10 years of age.	11 years of age.	12 years of age.	13 years of age.	Total No. under 14 yrs. of age.
1		1			1	2
2			1	1	1	3
3	1		1			2
4					2	2
5				2	4	6
6					4	4
7				2	2	4
8				1		1
9					2	2
10					5	5
11					1	1
12				5	14	19
13				2	6	8
14				1		1
	1	1	2	14	42	60

In all cases of detected violation the offenders have been promptly notified and warned against a repetition of the offense. Yet in spite of this, many cases have occurred where

the notices and warnings were flagrantly disregarded and the offense repeated. In all such cases prosecutions have followed and the offenders made to understand that they could not break the law with impunity.

One of the greatest difficulties that the inspectors have to contend with, is experienced in the enforcement of the act relating to affidavits. Proprietors willing to hire and parents anxious to obtain work for their children are found, who do not hesitate to try to evade the provisions of the law by false affidavits respecting the age of the child, the parents making the affidavit and the proprietor knowingly and willingly receiving it. Several cases of this kind have been prosecuted and convictions secured. As a sample a recent case may be cited. Father and son worked for a firm in Milwaukee. The son gave his age as 14 but on being closely questioned admitted that he was but 13. The father insisted that he was 14 and said that he had an affidavit to show it. He was asked where he lived in order that the mother might be interviewed. A street number was given but was found to be a wrong one. Eventually, however, the mother was found, who also insisted positively that the boy was 14 years of age. Reference to the records of the church and register of deeds showed beyond a doubt that he was but 13, a fact finally admitted by the father and mother. The parents were prosecuted in this case and fined. This is but one of many similar cases which our inspectors have to meet.

In its work along this line the Bureau has been greatly assisted by the different labor organizations throughout the state, which are beginning to realize that this is a vital matter, affecting not only the interests of laboring classes but of the whole state. This increasing interest on the part of labor itself is a bright sign and indicates favorable prospects in the future. May it never die out, but keep expanding and broadening as the years roll on until it may be truthfully and proudly stated that in our glorious state no child labors, who is not legally allowed to do so.

CHILD LABOR IN WISCONSIN DURING 1898 AND 1899.

As said, the child labor problem has received a great deal of attention in this state. Newspapers have discussed and deprecated the employment of young children. The labor unions, as such, are on record against it. The trend of public opinion and of economic and sociological thought is in the same direction. Laws restricting the labor of children also grace the statute books; and the inspectors whose duty it is to enforce these and other laws have done faithful work in this respect, though until in the spring of 1899 they were not numerous enough to accomplish much. While all this has finally resulted in decreasing the number of children at work, the child labor laws are still quite persistently violated in many of our manufacturing centers. The change for the better, however, is so marked that there seems to be the best of ground for hoping that before long this evil will have been reduced to a minimum.

The underlying causes of child labor are far-reaching and have been touched upon in the preceding pages. Some of the more immediate causes are so plain to all who have thought about the matter that they appear even commonplace. The fact that they are easily seen does not lessen their importance. To say that young children are put to work because their earnings are needed by themselves or their parents; because, in many cases, they really constitute cheap labor; and because of defective school laws and practically no truancy service, which unquestionably increases the chances for child labor, is to repeat truths with which everybody is familiar. Still, these are the very causes, against the operation of which all efforts to do away with child labor must be directed, in order to be successful. Child labor is not a wise or economical expenditure of labor force, nor to the ultimate interest of any one; but it may be, and often is, to the immediate interest of both employers and parents. Child labor cannot be abolished without reducing the income to many a family, nor without decreasing the profit to many employers. At the same time it seriously affects the growing generation, by taking away from the children their opportunity for development. This is therefore a

case where the interest of society, as a whole, comes into conflict with the immediate interests of individuals. Under such circumstances the course is plain. Society must protect itself and cannot afford to permit the employment of its children at the expense of such education and physical development as will fit them for their future duties in life.

The families and employers of children are about the only ones who are immediately interested in their labor, and of these the parents or family has the most at stake. It is not difficult to see why this may be so. The earnings of a child may be a much needed addition to the family income. Especially is this likely to be the case in times of sickness in the family and when there is lack of work or when other misfortunes are met with. In other instances it may mean more leisure to the head of the family. Experience teaches that the proportion of fathers who take advantage of the earnings of their little ones and spend much of their time in idleness is not small. That for these and other reasons the earnings of children should be eagerly sought is not surprising. To the employers child labor is mostly a question of profit. Though much has been said to the contrary it is undoubtedly a fact that, owing to improved machinery and the nature of the work, there are many industries in which child labor is really cheap labor and is therefore much sought by employers.

If the comforts of the family and the profits of the employer were of greater importance than the effect upon society and upon the children themselves there could be no valid objection to child labor. But such is not the case. Upon the way a child is brought up, depends its future welfare as well as that of society. In order to make the most of life both mind and body must be rightly developed and trained. To this end the child must have schooling and be excused from stunting labor. Early employment in factories and many other places makes schooling a side matter only and hard labor the rule. It is these facts which make child labor a social evil. Experience also seems to, at least in part, confirm the truth of the statement so often made, that the earnings of children seldom permanently increase the total income of the family. As hinted at already, the increase in the income through the earnings of children is often

offset by a decrease in the earnings of the father. On the part of the father child labor offers opportunities for shiftlessness. It also has a tendency to make him less on the alert in looking out for his own interests as a wage-earner. If the employment of children tended to raise the standard of living, as a whole, of the families affected, there might be something to say in its favor, but of such tendency there is little or no evidence. A family whose mode of life is once fixed is seldom lifted to a higher plane of life through such means. Of course, there are conditions in many families which can be relieved, to the best interest of all, by temporary employment of their children. But this does not vitiate the general rule that child labor is an evil.

Education is of the greatest importance not only from an economic, but from a social and political point of view. It increases the power to do things; it elevates man and multiplies his usefulness in every other walk of life. It has been held that more is accomplished in a lifetime when the first years of one's life are devoted to education. With but very few qualifications this proposition is unquestionably true. The training received might include the learning of a trade or be of a technical nature. Such training is often the most useful. Instances abound where it alone has developed productive and constructive capacities to a wonderful extent. From a political point of view it is of even greater importance. In a country like this where every citizen has a voice in the shaping of local and national governmental policy and in the settlement of issues, the very existence of our institutions depends upon a broad and intelligent citizenship. No matter, therefore, from what side it is looked at the interest of society lies in the devotion of the early part of the lives of its members to a preparation for the labor and duties that follow.

All kinds of labor are not equally injurious to a child. Farming, for instance, is carried on in the open air and brings those engaged in it in touch with nature. This in itself has a liberalizing effect. The learning of a trade is perhaps the next best thing to a good schooling. When carried on moderately, work of this nature may be even of much benefit to strong and healthy boys. Factory and mine labor, however, under all

the conditions of such labor, has no such redeeming features. In these occupations no opportunities are offered for learning a trade or to acquire any particular skill in special duties. The work also, as a rule, continues the year around and hence there is absolutely no chance for schooling. A great deal of such labor is also hard and the hours of labor long. The physical strain in many cases is therefore such as to more or less dwarf a large proportion of the children whose lot it is to constantly follow this calling. Of this the histories of the factory system and of mine operations are full of examples. It is true that there are circumstances where a strong, healthy boy, who has reached his twelfth year can, for limited periods, derive more pleasure in life from occasional employment than if deprived of such work. Such cases, however, partake of the exceptional and should be the subject of special treatment, such, in fact, as the laws regulating child labor in this state quite fully provide for. To employ children at the expense of their physical development is also economically unprofitable as such children are sure to accomplish less during their lifetime than if permitted to grow and fully develop. It is invariably true that the welfare of the child for his entire life depends largely upon his childhood; and the breaking down of the physical constitution of the child affects, besides his own life, that of future generations.

The child in the factory, in the mine and in other places of this kind should be at school. The child on the farm, or who is learning a trade, should also be at school; but in the latter this is not as important as in the former. Experience shows that the influence of the factory is much worse than that of the farm or from labor under the supervision of parents and the surroundings of the home. The children of the present are the citizens of the future; their influence upon society is felt as long as they live. Society is interested in a strong, healthy, efficient and intelligent race; and, being the natural protector of all children, it is only acting in its own interests when it steps in and protects its children from injurious labor and provides for them proper facilities for education and training.

Injurious as child labor is to the ultimate interest of society as a whole, the immediate interests subserved by it are so strong

that it can only be prevented by the best of laws and a strong and competent inspection service for the enforcement of these laws. Of this the conditions in this state furnish a very apt illustration. While Wisconsin, for nearly thirteen years has had laws prohibiting the employment of children under fourteen years of age, the employment of such children seems to have been very common during this period. At least, this inference seems justified from the numerous complaints of the violation of this law which have appeared from time to time in the various parts of the state. The inspectors whose duty it was to enforce the laws have often been openly accused of neglecting their duty. The fact that under the circumstances it was a physical impossibility for two inspectors to enforce all the factory laws, and that those relating to child labor were defective, was usually overlooked.

During 1897 strong efforts were made to prevent the violation of the child labor laws. It soon became apparent, however, that little in this line would be accomplished until additional inspectors and legislation were had. In order to obtain some light as to just what was needed in this respect as well as regarding the number at work it was decided early in 1898 to practically drop all other inspections and have the inspectors devote their entire time to child labor. The investigation which thus began with that year embraced for all larger employers of children every child sixteen years of age or under. This work assumed much greater proportions than was at first expected, and was continued throughout 1898 and 1899. The results for the first seven months, or from January to September, are presented on pages 490 to 555, in the eighth biennial report. These results were obtained from examining 3,360 children, who were employed in 215 establishments, and of whom 155 were illegally employed. From September, 1898, to March, 1899, 1,396 children sixteen years of age or under, employed in 75 distinct establishments, were covered, and of these 301 children were under fourteen years of age, and thus employed in violation of the law. The work was continued in a slightly different manner from this time on, and up to June 1st many more children were relieved from work. By this time the new laws for the regulation of child labor and author-

izing additional factory inspectors, which were enacted during April and May, 1899, had gone into force. For the first time in its existence the Bureau was now in position to do effective and proper work in the way of enforcing the factory acts. What was thus accomplished in connection with the enforcement of the laws relating to child labor, from September, 1898, to January, 1900, is presented in the following pages.

It was said above that a vigorous war on child labor has been waged since early in 1898 and that the results up to September of that year are given in the eighth biennial report of this bureau. Since that time nothing has been published in relation to this matter. In this part, however, it is the purpose to continue the account of this work and in the five tables in order, which follow here the main results as obtained from the first part of September, 1898, to the first of March, 1899, have been summarized.

The data collected are classified as to industries and number of establishments embraced in each industry is also given. The tables in order include facts relating to the number of children employed, the wages paid them, their schooling, their place of birth, etc., the occupation of their fathers and their home conditions in general, their earnings, together with the earnings of the entire family.

Industry Classification: Counting Miscellaneous as one, the table is made up of the data of eleven industries. This classification is not strictly true. The items under Miscellaneous were establishments which properly belong to over twenty distinct industries. Owing to the fact that the greater proportion of the data gathered in relation to this subject was presented in the next preceding report of this bureau, and also because the investigation was limited to the more extensive employment of children, it so happened that many industries were represented by returns from one or two establishments only. As it was not deemed best to present separately any industry which was represented by less than three establishments, all those with less than that number are included under one head or under the designation Miscellaneous.

Looking over the industries as they now stand it will be noticed that with one or two exceptions they are among those

which children are very likely to be employed. This, of course, accounts for the rather high proportion of children under sixteen, as shown by the final figures.

TABLE I.—*Proportion of children employed in certain industries.*

Industries.	No. of establishments.	Total persons employed.	16 yrs. of age or under.	Males under sixteen.	Female under sixteen.	Average age.	Under 14 yrs. of age.
Bicycles	3	400	24	23	1	14.3	3
Hats and shoes	3	630	56	27	29	14.9	6
Boxes (wooden and paper)	7	540	87	65	22	14.9	13
Cigars and tobacco	3	385	9	9	.....	14.9	2
Confectioneries	6	606	133	34	99	14.8	19
Furniture	4	606	57	57	.....	15.1	12
Knit goods	4	1,007	140	30	110	14.2	55
Trunks and valises	4	615	90	65	25	14.6	17
Tin ware	4	1,615	387	313	74	14.8	56
Wagons, carriage and s... ..	3	911	13	12	1	14.7	1
Miscellaneous	34	3,037	400	310	90	14.9	117
* Aggregate	75	10,251	1,396	945	451	14.8	301

The above table is the first in order of seven tables which embrace the data upon which the greater part of this part is based. The first column in order gives the industries into which the returns were classified. The succeeding columns give for each of these industries, the number of establishments included, the number of persons employed, the number of those who were sixteen years of age or under, the number of children classified as to sex, the average age of children sixteen years and under, and the number of children who were under fourteen years of age and thus illegally employed.

The aggregates in this table stand as follows: Industries, 11; number of establishments included, 75; whole number of persons employed regardless of sex and age, 10,251; number of children sixteen years of age and under, 1,396; number of male children sixteen years of age and under, 945; female children sixteen years of age and under, 451; average age of children, 14.8 years; number under fourteen years, 301.

Establishments: By this is meant a factory or plant under one management. Only the larger plants and those in which children were generally employed were included in this investigation. While in this way 215 establishments were covered in the proportion already published and 75 establishments are included here, it is not claimed that any of the larger industries

in the state are completely embraced. Many of the smaller industries were fully covered but no note is made of this. The entire aim of this undertaking was to find out the real situation as regards child labor and in this we, in a measure, succeeded.

As said, 75 establishments are included here. Of these 34, or 45.33 per cent., are found under Miscellaneous and these represent several industries. Of the remaining industries, boxes come next with 7 establishments, and then confectioneries with 6. Furniture, knit goods, trunks, and tinware show 4 each; and bicycles, boots and shoes, cigars and wagons have each 3 establishments. Standing alone this representation might be called light. In connection with what was shown in the previous report it becomes fairly complete.

Total number of persons employed: This column shows for each industry the total persons employed by the establishment included under it. This information was collected for several reasons. In the first place it conveys some idea of the importance of the industry and of the establishments represented. Then, again, when the number of children is also given, it enables a presentation of the relation between adult and child labor, not only as a whole, but as between the different industries. It is also of importance in many other ways, as may be readily seen.

In all the places inspected there were employed 10,251 wage earners. The number which come under the various industries varies. Miscellaneous shows the highest number of all, or 3,037, which is 29.63 per cent. of the aggregate. Tinware, with 1,515, or 14.78 per cent. is next. Then comes knit goods, showing 1,007 persons, or 9.73 per cent. Wagons, etc., show 911 persons, or 8.87 per cent. This industry, however, is not marked for child labor, requiring mostly skilled or heavy labor. The remaining industries showed a pay roll as follows: Bicycles, 400; boots and shoes, 630; boxes, 540; cigars and tobacco, 385; confectioneries, 606; furniture, 605; trunks and valises, 615.

Number of children sixteen years of age or under: In this column in the table is shown for each industry the number of children employed who at the time of inspection were sixteen or under. This data has, of course, no direct relation to the

Illegal employment of children, as the legal age limit is placed at fourteen years. It throws, however, a great deal of light upon the problem as a whole. It is an age under which no employment ought to be absolutely unrestricted. A child between fourteen and sixteen may undoubtedly be put to work with less danger of injury to himself and society than one under fourteen, but it has not passed the point where interference can be safely dispensed with. Under the law, as it now stands, all children under sixteen must also furnish affidavit as to age before they can be legally employed. This is about the only restriction as yet placed upon such employment in this state. Even this was chiefly brought about through the necessity of some such method in order to prevent the violation of the provision which prohibits the employment of children under fourteen. It is a fact that in most cases the age of a child cannot be precisely told from its appearance. Unless there is some record of all the children the inspectors can therefore be easily misled, and in order to prevent this the affidavit system referred to above has been found by far the most effective. In connection with the whole number employed, the number under sixteen offers opportunities for showing important relations.

The aggregate number of children sixteen years of age or under as given in the table is 1,396. The largest proportions of these are found under miscellaneous and tinware. In the former the number stands 400, or 28.66 per cent. of the whole. In the latter the number is almost as great, or 387, or 27.72 per cent. Two industries alone thus employed 56.38 per cent. of all those included here. The next industries in order in point of the number employed are knit goods and confectioneries, with 140 and 133 respectively, or 10.03 per cent. for the former and 9.53 for the latter. Practically 76 per cent. of the children were, as seen, found in the four industries mentioned. As to the remaining seven industries in which 24.06 per cent. had found work, the number was: Bicycles, 24; boots and shoes, 56; boxes, 87; cigars, etc., 9; furniture, 57; trunks, etc., 90; wagons, etc., 13.

As to the proportion of children the table also reveals some interesting facts. Of the 10,251 persons, which was the aggregate number employed, 1,396, or 13.62 per cent. were sixteen

years of age or under. Carrying these comparisons to each one of the different industries we find the following results: Bicycles, 6.00 per cent.; boots and shoes, 9.00 per cent.; boxes, 16.11 per cent.; cigars and tobacco, 2.34 per cent.; confectioneries, 21.95 per cent.; furniture, 9.42 per cent.; knit goods, 13.92 per cent.; trunks and valises, 14.63 per cent.; tinware, 25.54 per cent.; wagons, carriages, etc., 1.43 per cent., and miscellaneous, 13.17 per cent.

The average percentage of children for all the establishments included is thus 13.62. For some industries this percentage is greatly exceeded; for others it is much lower. Those above the average are led by tinware, in which 25.54 per cent. of the employees were sixteen years or under. In confectioneries they numbered 21.95 per cent. Three other industries, boxes, knit goods, and trunks, are in this class, though in these the percentage is smaller. The industries in which the percentage of children is below the average are led by wagons, carriages, etc., which show the smallest number of all, or only 1.43 per cent. Cigars and tobacco are the next lowest. Boots and shoes, furniture, bicycles, and miscellaneous are usually looked upon as extensive employers of children and show a rather high proportion here, though not fully up to the average.

Children sixteen years and under classified as to sex: The two last columns but one in the table show the respective number of male and female among the children employed. From the aggregates it is found that of the 1,396 children employed 945, or 67.69 per cent., were boys, and that 451, or 32.31 per cent., were girls. While the figures, as a whole, indicate that where boys are employed girls are also likely to be, there seems to be a great variation in the proportions as between the industries. In two industries no girls were found. This does not mean that girls are not employed in these industries, for former returns show they are, but simply that none were found in the few places visited at the time of inspection. Of the nine industries in which both sexes were found, six employed more boys than girls, while for the other three the girls were the most numerous.

Average age: To ascertain the age of children is not easy though it seems a very simple matter. The reason for this is

the limitation which has been placed upon child labor. Children of large growth and who were past fourteen years of age are, of course, ready to give correct answers, but those who look young or small and are under the legal age invariably report wrongly because they fear the inspector will have them dismissed from work. As the age given by those of doubtful appearance is, when possible, verified from public and private records, the instances where the inspectors were misled by those who gave wrong age are not very numerous. In fact, practically every child of doubtful age was made the subject of a special inquiry. The average age, as the column shows, is a little below fifteen years, or 14.8 years. And the average for each industry moves closely about this point.

Number of children under fourteen years of age: The last column in the table shows the number of children under fourteen years of age who were found at work at the time of this inspection. As explained already, fourteen years is the limit under which no child can be legally employed, unless under special conditions; and as these conditions were not alleged in any of the above cases, it follows as a matter of course that the number of children thus given represents, for the establishments included, the number of their violations of the child labor law.

The number of children investigated, the number and percentage of these who were under fourteen years of age, are presented in the following table:

Percentage of children under fourteen years of age.

Industries.	Number 16 yrs. or over.	Number under four- teen years.	Percentage under 14 yrs.
Bicycles	24	3	12.50
Boots and shoes	56	6	10.72
Boxes (wooden and paper)	87	13	14.94
Cigars and tobacco	9	2	22.22
Confectioneries	133	19	14.29
Furniture	57	12	21.06
Knit goods	140	55	39.29
Trunks and valises	90	17	18.89
Tin ware	387	56	14.47
Wagons, carriages and sleighs ....NN....	13	1	7.69
Miscellaneous	400	117	29.25
Aggregates	1,396	945	21.56

In the above table is seen that 1,396 children were sixteen years of age or under, and that of these 945, or 21.56 per cent.

were under fourteen years of age. Comparing the percentage under fourteen for the different industries it is to be noticed that knit goods ranks the highest, showing a proportion of 39.29 per cent. Miscellaneous shows 29.25 per cent. and is the next in order. As has been said, this classification, as the term indicates, is composed of several different industries. Cigars and tobacco, while not adequately represented here and therefore of less importance, show a percentage of 22.22. The fourth in order is furniture, with 21.05 per cent. From this point down to the lowest the relation is as follows: Trunks, etc., 18.89 per cent.; boxes, 14.94 per cent.; tinware, 14.47 per cent.; confectioneries, 14.29 per cent.; bicycles, 12.50 per cent.; boots and shoes, 10.72 per cent.; wagons, carriages, and sleighs, which show the smallest proportion of illegal employment, 7.69 per cent. Considering the fact that some of the above industries are not very fully represented the percentage given here should be used with caution.

TABLE II.—Average wages of children employed in certain industries.

Industries.	Number 16 years of age or under.	Average weekly wages.	Highest weekly wage.	Lowest weekly wage.
Bicycles	24	\$2 92	\$3 50	\$2 81
Boots and shoes	56	2 55	3 87	1 75
Boxes	89	2 71	3 71	2 43
Cigars and tobacco	9	2 28	3 18	2 00
Confectioneries	133	2 17	3 19	1 67
Furniture	57	2 95	3 40	2 55
Knit goods	140	2 35	3 69	1 89
Trunks and valises	90	2 76	3 70	2 25
Tinware	357	2 44	3 31	1 94
Wagons, carriages and sleighs	13	3 59	4 67	2 91
Miscellaneous	400	2 79	3 87	2 42
Aggregates	1,396	\$2 60	\$3 65	\$2 20

The preceding table shows for the examined classified as to industries the average, highest and lowest average wages paid. Each child was asked as to the wages received. From the answers obtained from these inquiries the figures, as shown, were computed. The average wages in each industry was obtained by dividing the amount for all children with the number of the children, and is thus absolute. The highest average was obtained by dividing the sum of the highest wage in each establishment included in the industry with the number receiving

this wage. The lowest average wage was likewise had from dividing the sum of the lowest wage for each establishment in each industry with the number of children receiving this wage. The highest and lowest average wages are presented here for the purpose of illustrating the range of wages in the different industries. Of the three columns in the table thus devoted to wages the first, or the one giving the average wages, is, of course, of the greatest importance.

The weekly wages thus paid the children examined in the industries covered and as presented in Table II was as follows:

Bicycles: For this industry the average weekly wages was \$2.92; the highest average weekly wages was \$3.50, and the lowest weekly wages was \$2.81. The range between the highest and lowest average was thus \$.69.

Boots and shoes: Weekly wages, average, \$2.55; highest average, \$3.87; lowest average, \$1.75; range, \$2.12.

Boxes: Weekly wages, average, \$2.71; highest average, \$3.71; lowest average, \$2.43; range, \$1.28.

Cigars, etc.: Weekly wages, average, \$2.28; highest average, \$3.18; lowest average, \$2.00; range, \$1.18.

Confectioneries, etc.: Weekly wages, average, \$2.17; highest average, \$3.19; lowest average, \$1.67; range, \$1.52.

Furniture: Weekly wages, average, \$2.95; highest average, \$3.40; lowest average, \$2.55; range, \$.85.

Knit goods: Weekly wages, average, \$2.35; highest average, \$3.69; lowest average, \$1.89; range, \$1.80.

Trunks, etc.: Weekly wages, average, \$2.76; highest average, \$3.70; lowest average, \$2.25; range, \$1.45.

Tinware: Weekly wages, average, \$2.44; highest average, \$3.31; lowest average, \$1.94; range, \$1.37.

Wagons, etc.: Weekly wages, average, \$3.59; highest average, \$4.67; lowest average, \$2.91; range, \$1.76.

Miscellaneous: Weekly wages, average, \$2.79; highest average, \$3.87; lowest average, \$2.42; range, \$1.45.

All industries: Weekly wages, average, \$2.60; highest average, \$3.65; lowest average, \$2.20; range, \$1.45.

Average wages: As seen the average weekly wages for all industries was \$2.60. In five of the eleven industries the average was higher than this, while in six it was lower. Taking

the industries as a whole it appears that those in which the proportion of women or children employed is the largest also pay the lowest wages. The character of the work does, of course, affect wages, and so does undoubtedly the age of the children. A boy of fifteen is likely, everything considered, to be offered a better wage than one of thirteen, though instances are not lacking where the pay is equal. As a whole, however, the differences in the wages of children between the different industries are not as great in proportion as between adult labor.

Highest average wages: The highest average wage for all industries was \$3.65 per week, or \$1.05 above the average. The variation between the industries is considerable, though in no case does it fall below \$3.00 per week, and in only one instance does it exceed \$4.00. In six industries the wages exceeded the average; in five it fell short of this point. The two extremes are found in wagons, etc., which is the highest, and cigars, etc., which is the lowest. The difference between these two is thus \$1.49, and as some of the characteristics which are peculiar to high or low wages are plainly present in these two industries, the difference in the wages thus confirm what has been hinted at above.

Lowest average wages: The lowest average wages for all industries was \$2.20 per week for each child. This is considerably below the highest average and \$.40 per week lower than the average wage. As between the industries the variation ranges from \$1.67 per week for confectioneries to \$2.91 for wagons, etc. These industries thus represent the lowest and the highest extremes, between which the figures for the others are found. For six industries the figures are above the average and for five they are below this figure. It may be noticed, if the figures in three columns of table II are compared, that the course of wages, as classified, tends in the same direction. Thus industries which show the highest average also show higher figures for the highest and lowest average wage.

Range of wages: As the highest and lowest average wages were computed from the single highest and lowest wages in each establishment, it can almost be said that the figures in each case represent the maximum and minimum wages for each industry and that the difference between the two points represents the

range of wages for children. This difference is in some industries considerable, in others less. Thus in boots and shoes it amounts to \$2.12 per week, while in bicycles it is only \$.69. These figures represent the highest and lowest point. The difference between the highest and lowest average wage for all industries is \$1.45 per week. Two separate industries show the same figure, while five show a higher and four a lower difference. The courses of these variations in wages are complex. It is likely, however, that the age of the children has something to do with it. A study of the figures indicate that the range of wages is greatest in industries with the most complex organization. These industries also seem to pay the highest wages.

School attendance: Each child was requested to report upon the school advantages enjoyed. The information thus desired and obtained related to the time of attendance and the kind of school attended. As regards the time they had been to school the answers were often vague and uncertain, and nearly if not quite always included such preliminary schooling as Sunday schools, etc., much was therefore left to be found out from surrounding circumstances. A calendar year was also called a school year no matter whether school had been attended regularly or not. As to the kind of school the answers were more definite. It was found that some had gone to public schools only, while others had gone to parochial schools only. A few had attended both of these kinds of schools, but as they were unable to correctly apportion the time to each, these were classed to the school which they had attended the longest. The following table, or table III, shows the number which had attended each school together with their years of attendance.

TABLE III.—*School attendance employed in certain industries.*

INDUSTRIES.	Children 16 years of age or under.	PUBLIC.				PAROCHIAL.			
		Number attending.	Average attendance. Years.	Highest attendance. Years.	Lowest attendance. Years.	Number attending.	Average attendance. Years.	Highest attendance. Years.	Lowest attendance. Years.
Bicycles	24	14	6.6	7.3	5.0	10	4.0	4.3	3.6
Boots and shoes	56	38	3.7	8.2	4.0	18	6.5	8.0	4.5
Boxes	87	44	7.0	8.0	5.0	43	3.0	5.0	2.0
Cigars and tobacco	9	6	7.6	8.4	6.9	3	4.5	5.0	4.5
Confectionery	133	52	6.6	8.5	6.1	81	5.0	8.9	5.3
Furniture	57	24	6.0	7.0	5.0	33	6.0	7.0	5.0
Knit goods	140	35	6.0	8.0	5.0	105	6.0	9.0	4.0
Trunks and valises	90	28	5.2	7.3	5.3	62	5.3	8.0	5.0
Tinware	387	109	6.0	9.0	3.0	278	5.0	9.0	2.5
Wagons, carriages, etc.	13	8	7.0	8.0	6.3	5	5.0	6.0	4.0
Miscellaneous	400	156	7.2	8.5	4.7	244	6.3	7.4	5.2
Aggregates	1,396	514	6.5	8.3	4.8	882	5.2	6.0	4.2

Public schools: The preceding table shows that of the 1,396 children included, 514 or 36.82 per cent. attended public schools only. This number is fairly distributed among the different industries. As to the time of attendance there is considerable of a variation, both as to the average and the highest and lowest average. The average for all industries is 6.5 years. In some cases, this time is exceeded by a whole year and over while in one the time of attendance falls one year short of this figure. The highest average time of attendance for all is 8.3 years. This is a high figure, but is pretty well approached in each industry. As to the lowest average attendance it falls far short of the average and highest. For all it was only 4.8 years. In one industry three years is the lowest, while in the others it varies from four years to over six years. As said above the figures here includes in most cases the entire time from the year when Sunday schools were first attended up to the time of the last attendance of any school, a calendar year being counted as a school year.

Parochial schools: The number of children attending this kind of schools was 882, or 63.18 per cent. of the total. The fact that so great a proportion of the children had attended parochial schools only indicate that they and their parents are members of the Catholic or Lutheran churches because these are the only denominations which maintain parochial schools. The average school attendance for all in this case was 5.2 years. The highest and lowest average attendance was 6 and 4.2 years re-

spectively. The variation in attendance as between the different industries is considerable. In some it is extremely low, while in others it comes fully up to the standard. Each industry is represented. As a whole, however, the attendance for parochial schools was much shorter than for public schools. This appears plainly in the table where the difference in favor of the latter is from one to two years.

Place of birth, etc.: The children were also asked concerning their place of birth and whether living at home with their parents. Information upon these points was easily obtained. Everything about it is of such a nature that even a child must be familiar with it. In this respect it is in sharp contrast with (for instance) the period they may have attended school. While most children may know the age at which their schooling began and ended, so much may have occurred during the period that in one way or another interfered with their attendance that the exact time of their schooling may be very difficult to determine. This was also reflected in the answers. In the first case they were definite, in the latter vague. It is true that facts concerning the schooling, place of birth, etc., has no direct bearing upon the enforcement of the laws, or upon the extent to which the law was violated, the ascertainment of which was the real purpose of this investigation, but they throw much light upon the conditions which materially affect the toiling children.

TABLE IV.—*Place of birth and living of children employed in certain industries.*

Industries.	Number 16 years of age or under.	Number born in Wisconsin.	Number born in other states.	Number born in Germany.	Number living with parents.
Bicycles	24	22	2	1	23
Boots and shoes	56	50	1	4	56
Boxes	87	78	.....	9	87
Cigars and tobacco	9	8	.....	1	9
Confectioneries	133	118	.....	16	133
Furniture	57	53	.....	4	54
Knit goods	140	112	.....	28	140
Trunks and valises	90	68	4	16	90
Tinware	387	272	7	94	387
Wagons, carriages, etc.	13	11	.....	2	12
Miscellaneous	400	275	20	120	400
Aggregates	1,396	1,067	34	295	1,391

*Three lived with other relatives and 2 were boarding.

Table IV, or the next preceding presentation thus shows, the number of children which were born in Wisconsin, the number born in other states, the number born in Germany, and the number which lived with their parents. Out of the total number, 1,067, or 76.43 per cent. were born in Wisconsin, 34, or 3.44 per cent. in other states, and 295, or 21.14 per cent. in Germany. Wisconsin is thus the birth place of over three-fourths of all the children included. Germany comes next with over one-fifth of the whole as her share, while all those born in foreign countries thus gave Germany as their birth place. There are good reasons for thinking that this is not strictly true. Judging from their names many of these children were evidently of Polish and Bohemian descent. For some reason, however, they failed to distinguish between these countries. As their answers could not be readily verified they were accepted as given. All but five children lived with one or both parents. Of the five who thus lived elsewhere three lived with other relatives and two were boarding.

Occupation of father, etc.: Information was sought concerning the occupation of the father or head of family, whether he was employed at the time and whether the family owned a home, the number in the family, and the number in same who were wage earners. The facts thus obtained are chiefly interesting because of the light they throw upon the economic and social conditions of the families to which the children examined belonged. The questions, as a rule, were readily and correctly answered. The most important exception to this was that relating to the ownership of home. Our purpose in this respect was to ascertain the value of the home when owned free of incumbrance, and when incumbered, the value of their equity. While practically all could tell whether their parents owned an interest in a home or not, only a few could give the value of this interest. This matter was therefore taken up separately and the results of this effort are shown later. The data mentioned above are presented in the following table and deserve close study.

TABLE V.—*Occupation of father and home conditions of children employed in certain industries.*

INDUSTRIES.	Sixteen years or under.	OCCUPATION OF FATHER.		Children who reported father working.	Children reporting parents own in home.	Number in family.	Number at work.
		Common labor.	Skilled labor.				
Bicycles	24	17	7	20	5	7	3
Boots and shoes	56	23	34	40	30	7	3
Boxes	87	81	6	63	54	7	2
Cigars and tobacco	9	7	2	6	4	6	2
Confectioneries	57	119	14	102	96	6	3
Furniture	140	43	14	37	42	6	3
Knit goods	104	125	15	103	97	7	2
Trunks and valises	90	80	10	74	61	8	3
Tinware	337	346	41	287	219	7	2
Wagons, carriages & sleighs	13	8	5	10	8	7	3
Miscellaneous	400	320	80	288	258	7	3
Aggregates	1,396	1,168	228	1,030	874	6.8	2.7

365 children reported father not working.

522 children report that their parents rented home.

The above table shows in detail the respective number who gave the occupation of the father as common labor and skilled trade, the number who reported that the father was working, the number who said that the family owned an interest in a home, the number of persons to each family and the number in family who were working for wages. Of the total, 1,168, or 83.67 per cent. gave the occupation of father as common labor, while 228, or 16.33 per cent. reported it as a trade. The line in this case could not be strictly drawn. Many occupations are such that it is difficult to tell just what class they come under. The classification made here is believed to be as near correct as it can be made. In most cases the father was also working. This appears from the fact that 1,030, or 73.78 per cent. reported to this effect. These figures also show that the unemployment at the time was 26.22 per cent., a rather high proportion. Nearly two-thirds, or 874, which is 63.25 per cent. reported that the family owned their home, or an equity in the same, while 522, or 36.75 per cent. reported that the family rented their home.

The proportion thus owning homes or property is surprisingly large. While this may not indicate as satisfactory an economic condition as would, at first, appear, it illustrates the prevailing desire to become the owner of property. As a whole the fami-

lies were large, considerably above the average. The average number of persons to each for all industries is 6.8 per cent. Comparatively speaking, the number of families in which there was only one wage-earner was small. This is plainly seen from the table where the average figures give 2.7 wage-earners to each.

As explained already the data which has just been analysed constitutes a continuation of an investigation of child labor which was begun early in 1898, and of which the first part was presented in the Eighth Biennial report of this bureau. As has also been said, the first part of the inquiry covered the first eight months of 1898 and the second, the one given here, covered the balance of that year and the first two months of 1899. The two parts therefore belong together. Reaching as it does one of the most serious evils of today this investigation, as a whole, is also of the greatest importance. Because of this, and in order that the more important results may be more conveniently found, the leading facts in the two presentations are brought together in the following pages in such a way that they may be treated as a whole. The principal data will be found in tables VI to X, inclusive.

TABLE VI.—*Number of establishments, aggregate and average persons employed, number under 16 and 14 years of age, the percentage under 16 as based upon the aggregate persons employed, the percentage under 14, as based upon the number 16 years and under, for the first and second part of the investigation, as well as for both.*

Investigation.	Num- ber of estab- lish- ments.	Aggre- gate per- sons em- ployed.	Aver- age pers'ns to each estab- lish- ment.	Num- ber 16 years of age and un- der.	Num- ber un- der 14 years of age.	Per- cent'ge under 16 of the to- tal per- sons em- ployed.	Per- cent'ge under 14 of the to- tal 16 years or un- der.
First part	215	33,805	157	3,360	155	9.90	4.60
Second part	75	10,251	137	1,396	301	13.62	21.56
Both parts, agg. av. pct...	290	44,056	152	4,756	456	10.80	9.53

The preceding table, which is the first in order in these comparisons, shows for each part of the investigation as well as for the whole, the number of establishments included, the aggregate persons employed, the average persons to each establishment, the number of children under sixteen and fourteen years of age, re-

spectively, the average wages and the highest and lowest average wages for all children sixteen years of age and under.

From all 290 establishments are included. Of these, 215 or 74.14 per cent. come under the first part, and 75, or 25.86 per cent. under the second. Throughout this investigation the aim was to reach establishments which either from the nature of their manufacture were likely to employ children, or from other sources were known to employ such labor. The greater proportion of such places in the state are also included.

The establishments thus embraced employed at the time of the inspection 44,056 persons of both sexes and all ages. The respective proportion of these who fall to the first and second part is 33,805 or 76.73 per cent., and 10,251, or 23.27 per cent. The chief purpose of gathering this data was to be able to show the percentage of children employed. As to the number employed in each establishment some idea may be gathered from the facts, that for the first part the average number to each is 157, for the second 137, while the average for all is 152 persons. These figures also indicate the industrial importance of the establishments included.

Of the whole number of persons thus employed 4,756, or 10.80 per cent. were sixteen years of age and under. Of this number 3,360, or 70.67 per cent. are in the first, and 1,396, or 29.33 in the second part. As between the two parts this indicates a greater percentage of children in the latter. This data thus shows the proportion of the workers which in reality can be classed as children. That a large number of our factories should be permitted to draw practically eleven per cent. of their working force from the class which ought to be in school is not very encouraging. It is true that nearly 91 per cent. of these children were legally employed, but this does not change matters. The facts are full of meaning both to the sociologist and the economist. Their importance in this respect is sufficient ground for their collection and presentation.

The real purpose for which this investigation was undertaken was to obtain some idea of the number of children under fourteen years of age which were employed in the state. As seen above, fourteen years is the legal limit at which children may be put to work. There are a few exceptions to this, but these are not

important enough to take account of here. It follows therefore as a matter of fact that those who employ children under fourteen do so, as a rule, in open violation of the law. For the whole investigation, as shown, the number under the legal age which were discovered was 456, or 1.04 per cent. of the aggregate persons employed. Of these 155, or 34 per cent. are for the first part, and 301, or 66 per cent. for the second. Practically two-thirds of those illegally employed are in the latter part. As the work embraced here covers about one year in time, and as 172 children under fourteen besides those given here were also discovered and dismissed, during this period, it can be said, that during one year 628 cases of illegal child labor were unearthed and corrected by the inspectors.

Comparing those under sixteen and fourteen years it is found that for the first part the percentage of the latter of the former was 4.60, for the second 21.56, and for both 9.59 per cent. This again affirms the proportionately large number of children under fourteen in the second part. As a whole the figures are significant and above everything else show the necessity for the improvement in the law and the increase in the inspection service which was granted by the legislature of 1899.

From the table as a whole it thus appears that, while the first part of the investigation covers 74.14 per cent. of the establishments, 76.73 of the persons employed, 70.67 per cent. of the children under sixteen, it embraces only 34 per cent. of the children under fourteen or those who were illegally employed. This variation is very striking particularly as the industry and location is largely the same for both parts. It is of course true that percentage under sixteen is only 9.90 in the first as against 13.62 in the second and that this difference would be felt in the number under fourteen. But even if allowance is made for this there remains a large percentage to be accounted for. What then are the reasons so many more violations were found in the latter part? The figures themselves can not explain this. The causes must therefore be found in some other way. In this case it is quite likely they can be attributed to the general business conditions in the two periods, and to the greater care the inspectors exercised in the latter case. Experience seems to confirm that increased business activity, or demand for labor, often

causes the employment of an unduly large proportion of children. An explanation of this can probably be found in the fact that in many manufacturing places additional help can be more easily obtained from the ranks of children than from adult workers. In times of business expansion therefore it is only natural that children should be employed whenever they can be used to advantage, and particularly if adult labor is scarce. When the first part of the investigation was made the industrial conditions throughout the country were rather unsettled, owing largely perhaps to the war. On the other hand business was rather brisk during the time of the second part. If the above theory is sound it is therefore only natural that the latter should show the greatest proportion of children.

The greater percentage of illegal child labor in the second part, however, is mostly accounted for by the fact that the investigation in this was much more thorough. One of the peculiarities incident to such employment is that no one of those concerned can be found who will admit that the child is under fourteen regardless of the facts in the case. Each one in turn tries to protect himself. The appearance of most children is also an unsafe guide. In order to be sure of the age in most cases it is therefore necessary to search public and private records. For the first part only very doubtful cases were verified in this manner. For the second part on the other hand the age of every child about which there was the least doubt was traced down. As the suspicion turned out to be well founded in practically every instance it is easy to see why the greater care in the latter should mean more children or in other words a greater number of violations.

The next table is devoted to wages. It shows, the average wages, the highest and lowest average wages of all the children examined in the two parts of the investigation. The average wages, as shown is absolute, being obtained by dividing the weekly wages by the number receiving it. By the highest and lowest average wage is meant the amount obtained, in each case from dividing the highest and lowest sum paid in each establishment by the number of establishments included. This method was observed throughout and has already been explained. It is repeated here in order to avoid any misunderstanding on this

point. As to the importance of a presentation of the wages paid, it can hardly be overestimated. Generally speaking wages are the share of seven-tenths of the entire population in the products of industry and thus determines the economic and social condition of this, the so-called wage class. In this particular instance it shows what children are paid for their services, and thus, in a way, measures their economic strength. Compared to the amount paid adults the wages of the children seems low, but their productive capacity is also less, though not always in proportion to the wages.

TABLE VII.—*Highest and lowest average wages for first and second part of the investigation, as well as for the whole.*

Investigation.	Number 16 years of age or under.	Average weekly wages.	Highest weekly wages.	Lowest weekly wages.
First part	3,360	\$2 69	\$3 38	\$2 28
Second part	1,396	2 60	3 65	2 20
Both parts, averages	4,756	\$2 66	\$3 46	\$2 26

Besides the children employed, which are included in order that the relations may be more plainly seen, the above table shows, that, for all children, the average wages was \$2.66 per week; that the highest and lowest average wages was \$3.46 and \$2.26 per week respectively. As to the average wage the difference between the first and second part was only nine cents, or from \$2.69 in the first part to \$2.60 for the second. For the highest average wages the difference is greater, the amount for the latter period being twenty-seven cents higher than that for the former. For the lowest average wages, however, the difference is even less than that for average, being only eight cents, from \$2.28 down to \$2.20 per week. The closeness with which the amounts in these two instances correspond is rather remarkable. This fact is of the greatest significance. Among other things it certainly means that the wages, as given, fairly represent the condition and can be depended upon.

The next table in order relates to the schooling of the children. Among other things it shows the number in each case who attended public and parochial schools. School attendance is one of the most important features in all data relating to children.

It goes far in disclosing the social condition not only of the children but of their parents and the society in which they live. High school attendance, a highly intelligent people and highly developed industrial and political institutions generally go together. In the same sense the contrary is also true. A highly developed common school system is the very foundation of free institutions. In a republic such as the United States, therefore, too much attention can not be paid to such education and training of the children as will fit them the best, for our social and political system.

TABLE VIII.—*School attendance of children included in first and second part of the investigation.*

Investigation.	Number 16 years or under.	Number attending public schools.	Average years of attend- ance pub. schools.	Number attending parochial schools.	Average years of attend- ance par. schools.
First part	3,351	1,226	6.5	2,125	6.1
Second part	1,396	514	6.5	882	5.2
Both parts, agg. and ave.	4,747	1,740	6.5	3,007	5.8

¹ children had not attended any school.

From above table it is seen that 4,747 children attended schools of some sort; that of these 1,740 children, or 36.61 per cent. of the whole had attended public schools; that 3,007 children, or 63.39 per cent. had attended parochial schools; that the average time or years of attendance was 6.5 for the former school and 5.8 years for the latter.

In the matter of school attendance there is a remarkably close coincidence between the proportion of children in the first and second part of the investigation, which attended each of the two classes of schools. There it is seen that of the 3,351 children in the first part 1,226, or 36.58 per cent. visited public and 2,125, or 63.42 per cent. visited parochial schools; while of the 1,396 children in the second part 514, or 36.82 per cent. attended public and 882, or 63.20 per cent. went to parochial schools. The relations here thus come within a fraction of one per cent. of being the same. The harmony between the two parts in this case is as close if not closer than for wages, and furnishes another instance of the character of the figures.

The school period was 6.5 years for the public and 5.8 for the parochial schools. There was thus a difference of seven-tenths of one year in favor of the public schools. The reasons for this were not obtained. It is likely, however, that the custom common to most parochial schools of confirming their children at the age of thirteen has something to do with it. When a child is confirmed it is also supposed to have completed its schooling. Usually the children quit school at this date and begin to look around for work. In the public schools on the other hand, studies rather than age governs the school attendance. The effect of this seems to be to keep a child in school a year or so longer. This is certainly in accordance with such observations in the matter as we have been able to make; but may not be the only reason for the above difference. Children who had attended both schools were included, with their whole school time, in the one they had attended the longest. As only a few, comparatively speaking, went to both schools this could not in any way materially affect the results.

TABLE IX.—*Classification as to place of birth, and number living with their parents for both parts.*

Industries.	Number 16 years or under.	Number born in Wisconsin.	Number born in other states.	Number born in Germany.	Number living with parents.
First part	3,360	2,618	150	593	3,313
Second part	1,396	1,067	34	295	1,391
Both parts, aggregates ..	4,756	3,685	184	887	4,704

¹46 children were living with other relatives; 6 children were boarding.

In the preceding table is given the place of birth of the children investigated together with the place where they lived at the time of inspection. Thus it shows the number born in Wisconsin, and in other states in the union, respectively, and the number born in Germany.

Of the total number of children 3,685, or 77.48 per cent. were born in Wisconsin, 184, or 3.87 per cent. in other states, and 887, or 19.65 per cent. in Germany. The relation of the figures as between the two parts do not vary much from that of the total. Thus it is found that, for the first and second part, those born

in Wisconsin amounted to 77.92 and 76.43 per cent., respectively, those born in other states 4.46 and 2.44 per cent., and those in Germany to 17.62 and 21.13 per cent., respectively. It is believed that the answers upon which these figures are based are fairly correct, except as to those born in Germany. As said above Germany, for some reason, was given, not only by those born there but by those born in many of the adjoining countries. Judging from their names the greater proportion, by far, of those born here were of foreign parentage.

The last column in the table shows that 4,704 lived with their parents. This is about 99 per cent. of the number of children included. Of the remaining children some were living with other relatives and others were boarding. As to whether or not the parents in these cases were living, all were not asked, but those questioned regarding it said that they were dead. Of those who lived with their parents the first part furnished 70.64 per cent., the second with 29.36 per cent. as its share. The children who lived elsewhere than with their parents numbered 47 and 5 respectively for the two parts.

TABLE X.—*Occupation of father and number reporting father working and owning home, respectively.*

INVESTIGATION.	Number 16 years or under.	OCCUPATION OF FATHER.		Number reporting father working.	Number reporting parents owned a home.
		Common labor.	Trade.		
First part	3,360	2,468	894	1,510	2,450
Second part	1,396	1,168	228	1,030	874
Both parts	4,756	3,634	1,122	1,540	1,324

1,499 children were asked whether their father was working.

2,229 children were asked whether their parents owned a home.

The above table is the last of the five tables in this series, or in which the data of the first and second part of the investigation is compared; and is devoted to the occupation of the father and whether he was working at time of inspection, also as to whether the father or family owned a home.

As to the nature of the occupation of the father it is seen that of 4,756 children who were asked regarding it 3,634 or 76.4 per cent. gave the occupation as that of "common labor;" while the

rest, or 1,122 children, being 23.59 per cent. of the whole, reported a "trade" as the occupation. This relation is fairly well borne out by each part, though not as closely as in some cases already noticed. For each part the figures stand 73.33 and 26.67 per cent. for the former, and 83.67 and 16.33 per cent. for the latter.

In the first part 1,099, in the second all, or 1,396 children were asked as to whether their father was working. In the former 592 or 54.78 per cent. answered in the affirmative. In the latter 1,030, or 73.78 per cent. gave similar answers. From this it thus appears that 45.22 and 26.22 per cent. were temporarily, at least, out of employment, while the average was 37.91 per cent.

In the matter of home ownership information was sought from 2,615 children, of these 1,324, or 50.63 per cent. stated that the family either owned a home or an equity in the same. About one-half of the families thus owned property. Of those who reported to this effect 450, or 34 per cent. were in the first part, and 874 children, or 66 per cent. in the second. The respective relation between those who reported owning property in the two parts was 36.91 for the first and 63.09 per cent. in the latter.

SUMMARIES OF A FEW OF THE LEADING FACTS PRESENTED FOR THE TWO PARTS OF THE INVESTIGATION.

For the two parts of this investigation 290 separate establishments were visited. These establishments employed 44,056 operatives and workers, or an average of 152 persons to each.

Of the aggregate persons thus employed 4,756, or 10.80 per cent. were sixteen years of age or under; and of these 456 were under fourteen years of age. The number under fourteen thus constitutes 1.04 per cent. of the aggregate persons employed and 9.59 per cent. of those sixteen and under. As fourteen years is the limit placed by law upon child labor it also follows that those under this age were illegally employed and therefore dismissed. Of the number sixteen years of age or under 3,021, or 65.67 per cent. were males and 1,735, or 34.33 per cent. were females.

The 4,756 children examined received an average weekly

wage of \$2.66; while their highest and lowest average weekly wages was \$3.46 and \$2.26, respectively.

As to school attendance it was found that 47.47 had attended school and that 9 had no schooling. As to the kind of schools attended it was found that 1,740, or 36.61 per cent. had gone to public schools and 3,007 or 63.39 had gone to parochial schools. In the former case the average time of attendance was 6.5 years; and in the latter 5.8 years.

Of the children sixteen or under, 3,685, or 77.48 per cent. were born in Wisconsin, 184, or 3.87 per cent. in other United States and 887, or 19.65 per cent. in Germany. As whether they were living with the family it was found, that 4,704, or over 99 per cent. lived with one or both parents, that 46 lived with other relatives, and that 6 were boarding.

As to the occupation of the father 3,634 or 76.41 per cent. of the 4,756 children gave that of "common labor," while 1,122, or 23.59 per cent. gave "trade." Some cases the father was dead but no deductions have been made for this.

As to whether their father had employment at the time of inspection and the family owned their home, a large proportion of the children were examined. In regard to employment of father 52.46 per cent. of the total, or 24.95 were questioned. Of these 1,540, or 61.72 per cent. said father was employed, and the remainder 955, being 38.28 per cent., said he had no employment at the time.

In regard to ownership of a home 2,615 children or about 55 per cent. of the total expressed themselves. Of these 1,324, or 50.63 per cent., stated that their families owned the home or an interest in the same; while 1,291, or nearly one-half, said that they had no interest in their home, or in other words, that they paid rent.

This investigation among other things thus resulted in a direct discovery by the inspectors of 456 cases of illegal employment of children. This, however, does not include all such cases which were found during the same period. At other visits to the establishments included here as well as to others in the state, 208 children in addition to the above were discovered. The total number of children dismissed during the period or year because of being illegally employed was therefore 664.

EARNINGS OF FAMILIES WHOSE CHILDREN WERE EMPLOYED FOR
WAGES.

The preceding pages have thus been devoted to showing, for a given number of establishments employing a given number of persons, the number of children under fourteen and sixteen years respectively, employed, and the wages, schooling and many other facts, bearing upon the condition of the children themselves as well as upon the condition in their homes. As has been explained, the data upon which the presentations are based were obtained from the children themselves, from others connected with them in some way, and from official or semi-official records.

What has thus been presented, however, does not, by far, cover all information relating to the families of these children which was collected while we were engaged in this work. For children who were under fourteen years of age, or who looked very young, or weak for their work, the investigation was carried to their homes when possible. The real purpose of this was to obtain information relating to the economic condition of the parents of those children with whose employment it thus, was our duty under the law to interfere. The data for this part was thus had from the parents directly, or from their homes.

The inquiries thus made related to the age of the father of the family, the number of persons in the family and the number working for wages, the kind and value of property owned, exclusive of household effects, and the time employed, rate of wages and amount earned last year by each person who had been working, whether full or part time.

The presentations are made in tables. The first in order, of these, includes the data obtained in 250 homes. Of the children whose appearance caused the investigation to be extended this far, 195 were under fourteen years and 55 were over this age. The second table covers 131 families and of the children in these cases 106 were under fourteen years and 25 were over. The third table embraces families in which the father was either dead or separated from it, and which were supported by the labor of the mother and children. Of these families there were six in each of which two of the children employed were under fourteen years, twenty-four in each of which one child employed

was under this age. In the remaining eight the child or children at work were above the legal age limit. Tables I and II are printed in order and analysed together. Table III is presented separately.

Earnings, etc., of families whose children were employed for wages.

Office number	Place of birth	Age of head of family	Number of persons in family	No employed outside head of family	Equity in home	Value of other property	Value of all property owned	Total earnings of whole family	Total earnings of members exclusive of head of family
1	Germany	60	8	2	\$400 00	\$500 00	\$900 00	\$672 00	\$372 00
2	Germany	46	10	3				885 42	470 46
3	Germany	38	6	1	6,000 00	8,000 00	14,000 00	1,848 00	348 00
4	Germany	50	10	3				653 00	303 00
5	Germany	49	8	1	300 00	400 00	700 00	215 00	75 00
6	Germany	63	8	3	2,000 00		2,000 00	1,482 00	1,050 00
7	Germany	39	6	2				699 00	133 00
8	Germany	64	4	2	900 00		900 00	395 00	270 00
9	Ireland	45	6	1				419 10	150 00
10	Poland	54	12	3	2,000 00	2,000 00	4,000 00	897 00	747 00
11	Germany	41	5	1	1,200 00	800 00	2,000 00	609 00	225 00
12	Germany	52	8	2	4,000 00		4,000 00	735 00	555 00
13	Germany	45	11	1				573 75	120 00
14	Germany	50	10	1	1,700 00		1,700 00	493 75	50 00
15	Germany	59	9	3	1,800 00		1,800 00	1,158 52	698 52
16	Germany	48	5	3				421 90	226 90
17	Ireland	52	7	2	600 00		600 00	589 10	321 60
18	Ireland	48	6	2				368 00	193 00
19	Wisconsin	27	3	1		800 00	800 00	900 00	150 00
20	Germany	51	8	2				310 00	166 00
21	Germany	56	3	1				198 50	50 00
22	Norway	43	9	2				1,111 02	511 02
23	Norway	50	9	1	1,200 00	300 00	1,500 00	494 00	52 00
24	Germany	45	6	2	500 00	300 00	800 00	689 00	299 00
25	Germany	66	4	3	2,000 00	3,000 00	5,000 00	1,018 50	898 50
26	Germany	45	7	1				300 00	150 00
27	Wisconsin	44	10	2				689 52	239 52
28	Germany	46	3	1	400 00	500 00	900 00	495 00	117 00
29	Germany	33	6	3				641 00	386 00
30	Germany	46	8	3	1,400 00		1,400 00	498 00	300 00
31	Norway	33	6	2	2,000 00		2,000 00	839 00	450 00
32	Germany	54	3	1				379 24	84 59
33	Germany	56	6	2				504 95	186 20
34	Norway	49	8	2	800 00		800 00	420 00	300 00
35	Germany	48	5	1	800 00		800 00	555 00	105 00
36	Germany	47	7	2				485 60	69 60
37	Wisconsin	42	11	2	500 00		500 00	495 00	198 00
38	Poland	45	6	2				408 70	306 00
39	Poland	38	6	2				476 00	276 00
40	Germany	52	7	2				532 50	232 50
41	Wisconsin	43	5	1	700 00	1,800 00	2,500 00	655 12	150 52
42	Germany	35	6	1				420 80	120 00
43	Ireland	62	3	1				485 00	35 00
44	Germany	50	11	1	800 00		800 00	477 10	152 10
45	Wisconsin	61	8	1				396 00	126 00
46	Germany	47	7	1	1,500 00		1,500 00	431 69	185 09
47	Wisconsin	37	5	1	6,200 00		6,200 00	545 00	126 00
48	Germany	44	8	1	1,800 00		1,800 00	504 00	84 00
49	Netherlands	58	6	2	2,500 00	1,000 00	3,500 00	797 10	369 60
50	Germany	47	6	2				328 40	206 40
Totals		2,413	345	98	\$44,000 00	\$19,400 00	\$63,400 00	\$30,495 28	\$13,429 12
Average		48.26	6.9	1.96	\$1,692 69	\$1,616 62	\$2,348 14	\$609 95	\$268 58

Earnings, etc., of families whose children were employed for wages.

Office number.	HEAD OF FAMILY.			OTHERS IN FAMILY.								
	Rate per day.	Days at work	Earnings for the year.	Rate per day.	Days at work.	Earnings for the year.	Rate per day.	Days at work.	Earnings for the year.	Rate per day.	Days at work.	Earnings for the year.
1	\$1 25	240	\$300 00	\$1 00	240	\$240 00	\$0 50	264	\$132 00			
2	1 33	312	414 96	83	306	253 98	58	306	177 48	\$0 30	130	\$39 00
3	5 00	300	1,500 00	1 16	300	348 00						
4	1 50	233	350 00	67	200	134 00	33	300	99 00	25	280	\$70 00
5	1 25	112	140 00	25	300	75 00						
6	1 50	288	432 00	2 00	300	600 00	67	300	201 00	53	300	\$159 00
7	2 00	258	516 00	50	288	144 00	25	156	39 00			
8	1 00	125	125 00	1 17	180	210 00	33	180	59 40			
9	1 15	234	269 10	50	300	150 00						
10	1 50	100	150 00	1 00	300	300 00	83	300	249 00	66	300	\$198 00
11	1 33	288	384 00	75	300	225 00						
12	1 00	180	180 00	1 25	300	375 00	60	300	180 00			
13	1 25	363	453 75	40	300	120 00						
14	1 25	355	443 75	50	100	50 00						
15	1 50	306	460 00	1 25	150	187 50	67	306	205 02	1 00	306	\$306 00
16	1 50	130	195 00	33	130	42 90	50	234	117 00	67	100	\$67 00
17	1 25	214	267 50	1 00	300	300 00	60	36	21 60			
18	1 00	175	175 00	50	156	78 00	50	230	115 00			
19	2 50	306	765 00	50	300	150 00						
20	1 00	140	140 00	50	150	75 00	50	156	78 00			
21	1 12	132	148 50	33	150	50 00						
22	2 00	300	600 00	1 17	306	358 02	50	306	153 00			
23	1 60	270	432 00	50	104	52 00						
24	1 33	294	390 00	50	282	140 00	50	318	159 00			
25	1 25	96	120 00	1 25	306	382 50	1 00	306	306 00	70	300	\$210 00
26	1 25	120	150 00	50	300	150 00						
27	2 50	180	450 00	58	300	174 00	42	156	65 52			
28	1 50	252	378 00	50	234	117 00						
29	1 50	169	255 00	42	300	126 00	50	300	150 00	41	264	\$109 20
30	1 50	132	198 00	1 25	120	150 00	25	300	75 00	25	300	\$75 00
31	1 25	312	389 00	50	300	150 00	1 00	300	300 00			
32	83	355	294 65	29	290	84 59						
33	1 25	250	318 75	37	260	96 20	50	180	90 00			
34	1 50	80	120 00	50	300	150 00	50	300	150 00			
35	1 80	250	450 00	35	300	105 00						
36	2 00	208	416 00	60	12	7 20	40	156	62 40			
37	1 50	198	297 00	33	300	99 00	33	300	99 00			
38	1 30	49	102 70	50	306	153 00	50	306	153 00			
39	1 25	160	200 00	50	276	138 00	50	276	138 00			
40	3 50	94	300 00	50	240	120 00	75	150	112 50			
41	1 45	348	504 60	53	284	150 52						
42	1 60	188	300 80	60	200	120 00						
43	1 50	300	450 00	50	70	35 00						
44	1 25	260	325 00	1 17	130	152 10						
45	1 50	120	180 00	42	300	126 00						
46	1 37	188	246 60	83	223	185 09						
47	3 00	140	420 00	50	250	125 00						
48	1 50	280	420 00	33	252	84 00						
49	1 75	270	427 50	75	266	199 50	70	243	170 10			
50	1 10	112	122 00	40	258	103 20	40	258	103 20			
\$78 81		10,766	\$17,066 16	\$33 53	12,119	\$8,144 90	\$15 61	7,223	\$3,960 22	\$5 07	2,280	\$11,300 00
\$1 57		215.32	\$341 32	\$0 67	242.38	\$162 89	\$0 54	248.97	\$136 55	\$0 56	253.33	\$136 55

Earnings, etc., of families whose children were employed for wages.

Office number.	Place of birth.	Age of head of family.	Number of persons in family.	No. employed outside head of family.	Equity in home.	Value of other property.	Value of all property owned.	Total earnings of whole family.	Total earnings of members exclusive of head of family.
51	Germany	44	8	2	\$2,500 00		\$2,500 00	\$372 00	\$237 00
52	Wisconsin	40	9	2		\$2,300 00	2,300 00	956 00	452 00
53	Germany	51	9	2				475 50	256 90
54	Germany	42	7	1	2,800 00	500 00	3,300 00	549 00	150 00
55	Germany	52	9	2				263 40	38 40
56	Holland	48	12	2	2,000 00	400 00	2,400 00	1,177 23	428 28
57	Germany	31	6	1				565 00	116 00
58	Germany	45	7	1	2,500 00		2,500 00	356 00	75 00
59	Germany	60	6	2		400 00	400 00	304 88	127 38
60	Germany	36	5	1		1,200 00	1,200 00	496 60	36 60
61	Germany	41	7	1	1,000 00		1,000 00	561 40	113 40
62	Wisconsin	44	7	2				297 15	117 15
63	Wisconsin	49	9	2				790 75	368 75
64	Canada	50	7	1	550 00		550 00	382 00	32 00
65	Poland	53	7	2				276 80	215 80
66	Germany	51	6	2				403 16	201 66
67	Germany	61	4	2				664 00	360 00
68	Poland	47	8	2				479 00	227 00
69	Germany	47	10	4	2,000 00		2,000 00	944 70	598 70
70	Germany	62	6	3				832 00	692 50
71	Germany	56	6	1	1,200 00		1,200 00	516 26	74 66
72	Germany	50	7	2	500 00	400 00	900 00	400 00	200 00
73	New York	55	8	2				912 00	586 00
74	Germany	57	3	2	400 00	100 00	500 00	345 00	196 00
75	Wisconsin	42	7	1				999 00	375 00
76	Germany	47	9	2	400 00	200 00	600 00	200 00	75 00
77	Wisconsin	52	9	2				877 50	615 00
78	Germany	48	7	1				446 00	96 00
79	Wisconsin	53	11	1				481 36	131 04
80	Michigan	40	7	2	300 00		200 00	496 00	96 00
81	Iowa	43	4	1	700 00		700 00	609 36	210 00
82	Germany	46	7	2	1,000 00		1,000 00	909 00	324 00
83	Wisconsin	43	5	1				444 00	84 00
84	Germany	46	5	1				478 00	100 00
85	Germany	56	6	2	2,000 00	500 00	2,500 00	428 00	203 00
86	Germany	52	6	2	1,200 00		1,200 00	571 10	266 10
87	Poland	43	7	2	400 00		400 00	415 80	201 60
88	Wisconsin	38	9	2				607 50	157 50
89	Canada	35	7	1				315 00	15 00
90	Germany	43	5	2	1,000 00	500 00	1,500 00	562 08	211 08
91	Poland	50	9	2	1,500 00	500 00	2,000 00	425 00	225 00
92	Germany	42	8	2				648 58	149 60
93	Canada	45	10	1	800 00		800 00	450 00	50 00
94	Germany	59	7	2				455 39	198 70
95	Germany	47	5	2		500 00	500 00	1,275 00	825 00
96	Austria	42	7	1		2,000 00	2,000 00	444 00	129 00
97	Wisconsin	45	10	3	700 00	50 00	750 00	1,148 50	773 50
98	Denmark	44	9	3	700 00	300 00	1,000 00	658 75	368 75
99	Germany	39	9	2		500 00	500 00	477 20	131 60
100	Germany	49	11	4	1,800 00		1,800 00	1,293 00	1,125 00
Totals ..		2,361	369	97	\$27,950 00	\$10,350 00	\$38,300 00	\$29,484 00	\$13,017 55
Average		47.22	7.3	1.9	\$1,215 22	\$646 87	\$1,320 69	\$589 67	\$260 36

Earnings, etc., of families whose children were employed for wages.

Office number.	HEAD OF FAMILY.			OTHERS IN FAMILY.								
	Rate per day.	Days at work	Earnings for the year.	Rate per day.	Days at work.	Earn- ings for the year.	Rate per day.	Days at work.	Earnings for the year.	Rate per day.	Days at work.	Earn- ings for the year.
51	\$1 25	108	\$135 00	\$0 37	300	\$111 00	\$0 42	300	\$126 00			
52	1 80	280	504 00	1 00	285	285 00	50	234	117 00	\$0 50	100	\$50 00
53	1 20	183	219 60	75	254	193 50	40	156	62 40			
54	1 40	285	399 00	50	300	150 00						
55	1 25	180	225 00	50	48	24 00	30	48	14 40			
56	2 14	350	749 00	83	258	214 14	83	258	214 14			
57	1 50	300	450 00	50	230	115 00						
58	1 25	225	281 00	25	300	75 00						
59	1 25	142	177 50	33	156	51 48	33	150	49 50	33	80	26 40
60	2 00	230	460 00	42	80	33 60						
61	1 60	280	448 00	54	210	113 40						
62	1 00	180	180 00	33	55	18 15	33	300	99 00			
63	1 50	288	432 00	50	200	100 00	35	205	71 75	40	205	82 00
64	1 25	280	350 00	50	64	32 00				50	210	105 00
65	1 25	48	60 00	83	130	107 90	83	130	107 90			
66	1 12	180	201 60	33	306	100 78	33	306	100 78			
67	1 50	196	294 00	60	300	180 00	60	300	180 00			
68	1 75	144	252 00	50	300	150 00	50	140	70 00			
69	1 17	300	351 00	83	300	249 00	67	230	154 10	42	200	84 00
70	1 50	133	199 50	33	250	82 50	2 00	180	360 00	1 00	230	115 00
71	1 60	276	441 60	66	112	74 66						
72	2 00	100	200 00	50	200	100 00	50	200	100 00			
73	1 25	262	327 00	1 25	300	375 00	1 00	210	210 00			
74	2 00	75	150 00	50	300	150 00	60	75	45 00			
75	2 00	312	624 00	1 25	300	375 00						
76	1 25	100	125 00	50	75	37 50	50	75	37 50			
77	1 25	210	262 50	1 25	284	355 00	1 00	260	260 00			
78	1 75	200	350 00	50	192	96 00						
79	1 16	302	350 32	42	312	131 04						
80	1 25	312	390 00	50	120	60 00	50	72	36 00			
81	1 52	208	399 36	75	280	210 00						
82	1 95	300	585 00	75	300	225 00	33	300	99 00			
83	2 00	180	360 00	42	200	84 00						
84	1 75	216	378 00	33	300	100 00						
85	1 25	180	225 00	40	260	104 00	33	300	99 00			
86	1 00	306	306 50	77	280	215 60	60	224	134 40			
87	1 40	153	214 20	40	168	67 20	33	150	49 50			
88	1 50	300	450 00	35	300	105 00	35	150	52 50			
89	1 25	240	300 00	25	60	15 00						
90	1 35	260	351 00	62	234	145 08	50	132	66 00			
91	1 00	200	200 00	75	150	112 50	75	150	112 50			
92	1 63	306	498 98	40	187	74 80	40	187	74 80			
93	2 00	200	400 00	50	100	50 00						
94	1 33	193	256 69	50	235	117 50	29	280	81 20			
95	1 50	300	450 00	2 00	300	600 00	75	300	225 00			
96	1 50	210	315 00	43	300	129 00						
97	1 25	300	375 00	1 12	260	299 50	1 00	260	260 00	85	280	230 00
98	2 50	120	300 00	1 25	230	287 50	35	150	52 50	25	75	18 75
99	1 60	216	345 60	50	196	98 00	40	84	33 60			
100	1 00	168	168 00	1 35	300	405 00	1 25	300	375 00	75	300	225 00

Earnings, etc., of families whose children were employed for wages.

Office number.	Place of birth.	Age of head of family.	Number of persons in family.	No. employed outside head of family.	Equity in home.	Value of other property.	Value of all property owned.	Total earnings of whole family.	Total earnings of members exclusive of head of family.
101	Germany	49	8	3				\$689 61	\$556 28
102	Germany	44	10	2	\$2,800 00		\$2,800 00	1,262 00	612 00
103	Germany	55	8	2	1,300 00		1,300 00	230 00	180 00
104	Poland	48	8	2	1,000 00		1,000 00	617 70	266 70
105	Germany	47	10	1				494 00	144 00
106	Germany	49	9	3	1,000 00		1,000 00	893 70	583 20
107	Germany	53	8	2	1,200 00		1,200 00	543 00	168 00
108	Germany	46	4	2	700 00		700 00	450 00	250 00
109	Germany	46	6	1	1,200 00		1,200 00	600 00	150 00
110	Germany	44	10	2	1,000 00		1,000 00	569 30	185 30
111	Germany	42	8	1	900 00		900 00	537 00	117 00
112	Germany	42	10	2				450 00	240 00
113	Germany	49	10	1	1,200 00		1,200 00	382 80	92 40
114	Austria	45	5	1				823 50	199 50
115	Germany	50	7	1				736 60	300 00
116	Germany	37	7	1				261 00	59 40
117	Germany	37	9	2				450 15	150 00
118	Germany	55	8	2	800 00		800 00	795 00	630 00
119	Poland	49	9	2	400 00	\$100 00	500 00	500 00	250 00
120	Germany	55	4	2	900 00		900 00	350 00	150 00
121	Poland	41	3	1				630 00	100 00
122	Germany	53	9	2	1,500 00		1,500 00	499 00	249 00
123	Germany	41	8	2				329 00	104 00
124	Germany	47	7	2	1,200 00		1,200 00	510 40	210 40
125	Germany	51	5	2				349 00	249 00
126	Germany	51	9	3	900 00		900 00	499 00	399 00
127	Germany	44	7	2	600 00		600 00	334 40	84 40
128	Wisconsin	47	8	3	200 00		200 00	536 50	334 00
129	Poland	43	11	2	800 00		800 00	401 22	176 22
130	Germany	46	8	3				871 50	451 50
131	Germany	43	9	2	1,200 00		1,200 00	582 05	213 30
132	Wisconsin	43	4	1				256 00	28 00
133	Germany	49	14	4	900 00	100 00	1,000 00	962 80	737 80
134	Germany	53	9	4	600 00	240 00	840 00	1,074 00	930 00
135	Norway	41	6	1	500 00	300 00	800 00	738 00	135 00
136	Germany	53	7	1	300 00		300 00	378 00	63 00
137	Poland	66	4	1	2,500 00		2,500 00	405 00	179 00
138	Poland	51	8	3		200 00	200 00	587 50	376 00
139	Germany	54	7	2	600 00		600 00	675 00	300 00
140	England	54	11	2		300 00	300 00	550 00	406 00
141	Germany	47	14	4	2,000 00		2,000 00	1,092 00	732 00
142	Switzerland	46	7	2	2,500 00	400 00	2,900 00	670 00	400 00
143	Wisconsin	42	12	3	800 00		800 00	681 00	321 00
144	Germany	51	8	1				579 00	180 00
145	Germany	43	7	1				340 00	100 00
146	Germany	48	7	1				437 00	112 00
147	Germany	51	6	3	1,600 00	25 00	1,625 00	459 00	264 00
148	Germany	53	6	1				352 50	187 50
149	Germany	50	6	3				634 00	400 00
150	Germany	51	4	2	900 00	300 00	1,200 00	565 00	250 00
Totals ...		2,295 1	388	99	\$34,000 00	\$1,965 00	\$35,965 00	\$28,653 23	\$14,047 90
Average .		47.9	7.7	1.9	\$1,096 79	\$218 33	\$1,089 85	\$573 06	\$280 95

Earnings, etc., of families whose children were employed for wages.

Office number.	HEAD OF FAMILY.			OTHERS IN FAMILY.								
	Rate per day.	Days at work	Earnings for the year.	Rate per day.	Days at work	Earnings for the year.	Rate per day.	Days at work	Earnings for the year.	Rate per day.	Days at work.	Earnings for the year.
101	\$0 83	160	\$133 33	\$1 00	240	\$240 00	\$0 83	216	\$179 28	\$0 50	274	\$137 00
102	2 50	260	650 00	1 50	300	450 00	54	300	162 00			
103	1 00	50	50 00	30	300	90 00	30	300	90 00			
104	1 50	234	351 00	83	240	199 20	47	1 50	67 50			
105	1 25	280	350 00	48	300	144 00						
106	1 15	270	310 50	1 00	288	288 00	70	216	151 20	60	240	144 00
107	1 25	300	375 00	42	200	84 00	42	200	84 00			
108	1 00	200	200 00	50	250	125 00	50	250	125 00			
109	1 50	300	450 00	50	300	150 00						
110	1 60	240	384 00	1 25	100	125 00	35	172	60 30			
111	1 75	240	420 00	50	234	117 00						
112	1 50	140	210 00	40	300	120 00	40	300	120 00			
113	1 10	264	290 40	35	264	92 40						
114	2 00	312	624 00	66	300	199 50						
115	1 48	295	436 60	1 00	300	300 00						
116	1 20	168	201 60	33	180	59 40						
117	1 15	261	300 15	25	300	75 00	25	300	75 00			
118	1 25	132	165 00	1 35	300	405 00	75	300	225 00			
119	1 25	200	250 00	50	250	125 00	50	250	125 00			
120	1 00	200	200 00	50	150	75 00	50	150	75 00			
121	1 50	300	450 00	60	300	180 00						
122	1 25	200	250 00	50	300	150 00	33	300	99 00			
123	1 25	180	225 00	33	156	52 00	33	156	52 00			
124	1 50	200	300 00	38	263	99 94	42	238	110 46			
125	1 25	80	100 00	75	266	199 50	1 50	33	49 50			
126	1 25	80	100 00	50	300	150 00	50	300	150 00	33	300	99 00
127	1 25	200	250 00	58	160	58 00	66	40	26 40			
128	2 25	90	202 50	30	230	69 00	50	230	115 00	50	300	150 00
129	1 50	150	225 00	33	234	77 22	33	300	99 00			
130	2 33	180	420 00	83	300	249 00	33	250	82 50	40	300	120 00
131	1 25	295	368 75	46	270	124 20	33	270	89 10			
132	2 00	114	228 00	25	112	28 00						
133	1 25	180	225 00	1 00	224	224 00	1 25	196	245 00	65	224	145 60
134	1 50	96	144 00	1 25	240	300 00	1 00	300	300 00	55	224	123 20
135	2 00	300	600 00	92	150	138 00				60	300	180 00
136	1 50	210	315 00	50	126	63 00						
137	1 00	216	216 00	75	252	189 00						
138	1 25	170	212 50	50	300	150 00	50	300	150 00	50	150	75 00
139	1 25	300	375 00	50	300	150 00	50	300	150 00			
140	2 00	72	144 00	50	60	30 00	1 66	200	376 00			
141	1 20	300	360 00	70	300	210 00	84	300	252 00	36	300	108 00
142	1 00	270	270 00	66	300	200 00	66	300	200 00	54	300	162 00
143	1 50	240	360 00	32	300	96 00	50	300	150 00	25	300	75 00
144	1 33	300	399 00	60	300	180 00						
145	3 50	80	280 00	50	200	100 00						
146	1 35	240	325 00	50	224	112 00						
147	1 25	156	195 00	66	240	160 00	10	240	24 00	33	240	80 00
148	1 10	150	165 00	1 25	150	187 50						
149	1 50	156	234 00	33	300	100 00	50	300	150 00	1 00	150	150 00
150	1 75	180	315 00	33	300	100 00	50	300	150 00			

Earnings, etc., of families whose children were employed for wages.

Office number.	Place of birth.	Age of head of family.	Number of persons in family.	No. employed outside head of family.	Equity in home.	Value of other property.	Value of all property owned.	Total earnings of whole family.	Total earnings of members exclusive of head
151	Germany	44	9	1	\$1,000 00	\$150 00	\$1,150 00	\$478 00	\$100 00
152	Germany	58	5	1	1,500 00		1,500 00	604 80	460 80
153	Wisconsin	47	8	1				750 00	300 00
154	Germany	39	9	1	1,000 00	500 00	1,500 00	594 00	120 00
155	Poland	43	7	1				257 60	56 00
156	Germany	43	10	2	2,500 00		2,500 00	812 10	212 10
157	Germany	65	8	2				275 00	200 00
158	Germany	54	9	2				350 00	150 00
159	Wisconsin	51	5	2				585 00	420 00
160	Germany	43	8	2	700 00		700 00	336 00	38 00
161	France	46	7	2	2,500 00	500 00	3,000 00	557 00	305 00
162	Germany	45	10	2	1,600 00		1,600 00	870 00	450 00
163	Germany	45	10	1				522 40	162 40
164	Germany	49	11	2	2,500 00		2,500 00	776 00	498 00
165	Germany	56	8	2				708 40	442 40
166	Poland	46	8	2	1,500 00	500 00	2,000 00	675 00	300 00
167	Poland	41	10	1	300 00		300 00	525 00	150 00
168	Poland	46	9	2	1,800 00		1,800 00	312 00	186 00
169	Germany	55	12	3	1,600 00		1,600 00	675 00	405 00
170	Germany	47	5	1	1,200 00	100 00	1,300 00	554 40	104 40
171	Germany	41	10	2				951 00	501 00
172	Germany	46	7	1	1,200 00	600 00	1,800 00	453 00	75 00
173	Germany	42	9	2				435 00	285 00
174	Germany	38	10	1	1,600 00		1,600 00	795 00	120 00
175	Germany	41	8	2	1,400 00		1,400 00	541 25	166 25
176	Wisconsin	51	3	1	300 60		300 00	225 00	75 00
177	Germany	48	10	3		500 00	500 00	870 00	600 00
178	Germany	43	10	1	1,800 00	300 00	2,100 00	705 00	105 00
179	Germany	47	7	3				876 00	351 00
180	Maryland	45	6	1		300 00	300 00	486 00	150 00
181	Germany	57	6	2	2,000 00		2,000 00	575 00	350 00
182	Poland	47	10	1	900 00		900 00	355 00	75 00
183	Germany	49	9	2				637 00	187 00
184	Germany	46	12	3	900 00	1,100 00	2,000 00	747 00	297 00
185	New York	61	3	1	2,500 00	1,500 00	4,000 00	1,100 00	100 00
186	Austria	46	7	2	1,200 00	300 00	1,500 00	488 25	345 00
187	Germany	46	4	1	500 00	100 00	600 00	416 25	135 00
188	Germany	53	10	4		1,000 00	1,000 00	1,167 00	768 00
189	Missouri	41	8	2		800 00		571 50	309 00
190	Germany	59	3	1	2,000 00		2,000 00	520 00	120 00
191	Norway	46	11	3	1,200 00		1,200 00	1,040 70	637 50
192	Germany	60	8	1	700 00		700 00	240 00	120 00
193	Germany	44	5	2				675 00	300 00
194	Germany	54	6	2	1,000 00		1,000 00	306 50	136 50
195	Wisconsin	43	7	1				550 00	200 00
196	Germany	53	10	3				418 50	405 00
197	Germany	42	7	2	550 00	550 00	1,100 00	383 40	135 00
198	Hungarian	47	10	1	350 00		350 00	630 00	300 00
199	Holland	53	8	1	1,500 00		1,500 00	504 00	120 00
200	Germany	53	13	1	600 00		600 00	462 50	275 00
Totals		2,403	306	90	\$41,900 00	\$8,800 00	\$50,700 00	\$29,435 55	\$12,899 35
Average		48.06	6.1	1.8	\$1,309 38	\$550 00	\$1,408 33	\$588 71	\$257 98

Earnings, etc., of families whose children were employed for wages.

O f f i c e n u m b e r.	HEAD OF FAMILY.			OTHERS IN FAMILY.								
	Rate per day.	Days at work.	Earn- ings for the year.	Rate per day.	Days at work.	Earn- for the year.	Rate per day.	Days at work.	Earnings for the year.	Rate per day.	Days at work.	Earnings for the year.
151	\$1 26	300	\$378 00	\$0 33	300	\$100 00						
152	1 50	96	144 00	3 20	84	288 80						
153	2 50	180	450 00	1 00	300	300 00						
154	1 58	300	474 00	40	300	120 00						
155	1 20	168	201 60	25	224	56 00						
156	2 00	300	600 00	50	210	105 00	26	210	54 60	25	210	52 50
157	75	100	75 00	50	200	100 00	50	200	100 00			
158	2 00	100	200 00	33	150	50 00	66	150	100 00			
159	60	275	165 00	50	280	140 00	50	280	140 00	50	280	140 00
160	1 25	240	300 00	25	144	36 00						
161	1 00	252	252 00	55	300	165 00	50	280	140 00			
162	1 50	280	420 00	75	300	225 00	75	300	225 00			
163	2 00	180	360 00	58	280	162 40						
164	1 25	224	280 00	1 00	240	240 00	66	240	160 00	40	240	96 00
165	1 50	174	261 00	83	280	232 40	75	280	210 00			
166	1 25	300	375 00	50	300	150 00	50	300	150 00			
167	1 25	300	375 00	60	300	150 00						
168	1 50	84	126 00	25	300	75 00	37	300	111 00			
169	1 50	180	270 00	1 25	150	187 50	1 25	150	187 50	50	60	30 00
170	2 00	225	450 00	58	180	104 40						
171	1 50	300	450 00	1 00	300	300 00	67	300	201 00			
172	1 50	252	378 00	25	300	75 00						
173	1 50	100	150 00	50	300	150 00	45	300	135 00			
174	2 25	300	675 00	50	240	120 00						
175	1 25	300	375 00	35	225	78 75	35	250	87 50			
176	1 25	120	150 00	50	150	75 00						
177	1 35	200	270 00	1 00	300	300 00	60	300	180 00	40	300	120 00
178	2 00	300	600 00	35	300	105 00						
179	1 75	300	525 00	1 00	96	96 00	67	300	201 00	45	120	54 00
180	1 40	240	336 00	50	300	150 00						
181	1 00	225	225 00	50	300	150 00	66	300	200 00			
182	1 25	225	280 00	75	100	75 00						
183	1 50	300	450 00	41	200	82 00	35	300	105 00			
184	1 50	300	450 00	50	250	125 00	50	200	100 00	60	125	72 00
185	3 33	300	1,000 00	1 00	100	100 00						
186	1 13	125	141 25	75	300	225 00	40	300	120 00			
187	1 25	225	281 25	45	300	135 00	90	240	216 00	50	240	120 00
188	1 31	300	399 00	80	240	192 00				1 00	240	240 00
189	1 75	150	262 50	72	300	216 00	62	150	93 00			
190	1 33	300	400 00	50	240	120 00						
191	1 80	224	403 20	1 50	300	450 00	75	150	112 50	50	150	75 00
192	1 20	160	120 00	40	300	120 00						
193	1 25	300	375 00	50	300	150 00	50	300	150 00			
194	1 00	170	170 00	41	150	61 50	50	150	75 00			
195	2 00	175	350 00	66	300	200 00						
196	75	18	13 50	40	300	120 00	50	300	150 00	45	300	135 00
197	1 15	216	248 40	60	150	90 00	60	75	45 00			
198	1 10	300	330 00	1 00	300	300 00						
199	1 60	240	384 00	40	300	120 00						
200	1 25	150	187 50	1 00	275	275 00						
	\$73 51	11,013	\$16,536 20	\$33 26	12,338	\$7,823 77	\$16 49	6,701	\$3,821 10	\$5 88	2,445	\$1,254 50
	\$1 47	220,26	\$330 72	\$0 66	246,76	\$156 47	\$0 57	237,89	\$136 46	\$0 49	203,75	\$104 50

Earnings, etc., of families whose children were employed for wages.

Case number.	Place of birth.	Age of head of family.	Number of persons in family.	No. employed outside head of family.	Equity in home.	Value of other property.	Value of all property owned.	Total earnings of whole family.	Total earnings of members exclusive of head of family.
301	Germany	39	12	2				\$331 25	\$237 50
302	Germany	45	11	1	\$1,500 00	\$500 00	\$2,000 00	300 00	125 00
303	Germany	50	16	1	600 00	200 00	800 00	570 00	195 00
304	Poland	60	3	2				362 50	332 50
305	Germany	50	5	1		500 00	500 00	442 50	150 00
306	Germany	46	12	4				1,425 00	1,050 00
307	Denmark	41	4	1				591 00	201 00
308	Germany	53	5	2	800 00		800 00	543 33	153 33
309	Germany	52	10	2	900 00	150 00	1,050 00	215 00	90 00
310	Germany	47	10	2		100 00	100 00	628 80	328 80
311	Canada	47	13	2	550 00	200 00	750 00	393 75	123 75
312	Germany	50	9	2	1,600 00	600 00	2,200 00	675 00	270 00
313	Germany	51	7	1	1,800 00		1,800 00	471 00	96 00
314	Denmark	51	4	1		300 00	300 00	400 00	150 00
315	Denmark	53	4	1	850 00		850 00	427 25	90 00
316	Wisconsin	37	7	2	1,600 00		1,500 00	837 50	650 00
317	Germany	43	5	1	900 00		900 00	370 00	90 00
318	Wisconsin	39	6	1				750 00	75 00
319	Germany	56	9	2	300 00	2,000 00	2,300 00	274 80	154 80
320	Germany	45	4	2	1,500 00	900 00	2,400 00	506 25	145 25
321	Austria	42	8	3	2,200 00		2,200 00	711 00	375 00
322	Germany	54	6	3	1,000 00	2,000 00	3,000 00	1,800 00	1,400 00
323	Germany	54	5	1				600 00	225 00
324	Norway	57	5	1	1,200 00	400 00	1,600 00	425 00	75 00
325	Wisconsin	34	9	2	4,000 00	100 00	4,100 00	1,550 00	1,150 00
326	Germany	39	10	2				580 00	180 00
327	Germany	46	4	2	900 00	200 00	1,100 00	835 00	510 00
328	Germany	37	4	1	3,500 00		3,500 00	501 27	107 52
329	Germany	44	7	1	3,500 00		3,500 00	768 75	168 75
330	Germany	51	9	5	3,600 00	400 00	4,000 00	925 00	700 00
331	Germany	60	9	3	1,000 00		1,000 00	732 50	607 50
332	Germany	46	7	1	200 00		200 00	340 00	90 00
333	Germany	50	9	1	800 00		800 00	275 00	150 00
334	Germany	40	5	1	300 00		300 00	637 50	37 50
335	Germany	48	8	2	1,700 00		1,700 00	426 00	195 00
336	Denmark	41	3	1				351 00	75 00
337	Wisconsin	39	10	1				640 00	40 00
338	Germany	45	10	1	1,500 00		1,500 00	550 00	125 00
339	Germany	48	9	3	1,300 00	300 00	1,600 00	756 00	306 00
340	Germany	43	7	1				425 00	200 00
341	Germany	46	7	2		1,000 00	1,000 00	312 00	222 00
342	Germany	51	9	2	1,500 00		1,500 00	630 00	330 00
343	Russia	42	7	1				592 50	142 50
344	Germany	47	8	1	1,500 00		1,500 00	780 00	180 00
345	Germany	53	9	2	1,000 00		1,000 00	462 00	192 00
346	Germany	46	7	2	2,000 00		2,000 00	805 00	490 00
347	Germany	47	7	2	500 00		500 00	550 00	250 00
348	Wisconsin	44	8	3	850 00	600 00	1,450 00	1,207 00	582 00
349	Austria	52	7	1	500 00		500 00	305 00	125 00
350	Germany	44	7	1	1,200 00	200 00	1,400 00	375 00	105 00
Totals ..		2,369	374	87	\$48,550 00	\$10,650 00	\$59,200 00	\$30,401 45	\$14,073 70
Average .		47.38	7.48	1.72	\$1,345 83	\$560 52	\$1,261 53	\$608 03	\$281 47

Earnings, etc., of families whose children were employed for wages.

Office number	HEAD OF FAMILY.			OTHERS IN FAMILY.								
	Rate per day.	Days at work.	Earnings for the year.	Rate per day.	Days at work.	Earnings for the year.	Rate per day.	Days at work.	Earnings for the year.	Rate per day.	Days at work.	Earnings for the year.
201	\$1 25	75	\$93 75	\$0 50	250	\$125 00	\$0 45	250	\$112 50			
202	1 40	125	175 00	50	250	125 00						
203	1 20	300	375 00	60	300	195 00						
204	70	40	30 00	150	141	212 50	1 00	120	120 00			
205	1 25	234	292 50	50	300	150 00						
206	1 25	300	375 00	1 33	300	400 00	65	300	200 00	\$0 50	300	\$150 00
										1 00	300	300 00
207	1 30	300	390 00	67	300	201 00						
208	1 34	300	400 00	33	100	133 3	50	300	150 00			
209	1 25	100	125 00	30	100	45 00	30	100	45 00			
210	1 25	240	300 00	62	240	148 80	75	240	180 00			
211	1 50	180	270 00	50	150	75 00	65	75	48 75			
212	1 35	300	405 00	40	150	60 00	40	150	60 00	50	300	150 00
213	1 50	250	375 00	32	300	96 00						
214	1 25	200	250 00	50	300	150 00						
215	1 35	250	337 50	50	180	90 00						
216	1 25	150	187 50	40	250	100 00	2 00	275	550 00			
217	1 40	200	280 00	30	300	90 00						
218	2 25	300	675 00	45	300	135 00	33	60	19 80			
219	80	150	120 00	55	175	87 50	33	175	57 75			
220	1 50	240	360 00	75	180	135 00	53	240	120 00	40	300	120 00
221	1 60	210	336 00	50	300	500 00	50	300	300 00	2 00	300	600 00
222	1 60	250	400 00	1 66	300	225 00	1 00	300	300 00			
223	1 25	300	375 00	75	300	225 00						
224	1 40	250	350 00	50	150	75 00						
225	1 65	300	400 00	2 00	300	600 00	1 50	300	450 00			
226	1 33	300	400 00	40	225	90 00	40	225	90 00			
227	1 30	250	325 00	1 50	300	450 00	30	200	60 00			
228	1 75	225	393 75	56	192	107 50						
229	2 00	300	600 00	75	225	168 75	45	300	135 00	25	140	35 00
230	1 50	150	225 00	1 20	200	240 00	1 20	200	240 00	33	150	50 00
231	1 25	100	125 00	1 50	200	300 00	40	300	120 00	1 25	150	187 50
232	1 25	200	250 00	30	300	90 00						
233	1 25	100	125 00	50	300	150 00						
234	2 00	300	600 00	50	75	37 50						
235	1 10	210	231 00	50	250	125 00	35	200	70 00			
236	1 38	200	276 00	50	150	75 00						
237	2 00	300	600 00	50	80	40 00						
238	1 70	250	425 00	50	250	125 00						

Recapitulation of Table I.

Office number.	Age of head of family.	Number of persons in family.	No. employed outside head of family.	Equity in home.	Value of other property.	Value of all property owned.	Total earnings of whole family.	Total earnings of members exclusive of head of family.
1	2,413	345	98	\$44,000 00	\$19,400 00	\$63,400 00	\$30,495 28	\$13,429 12
2	2,361	369	97	27,950 00	10,350 00	38,300 00	29,484 00	13,017 55
3	2,335	398	99	34,000 00	1,965 00	35,965 00	28,653 23	14,047 90
4	2,403	565	90	41,900 00	8,800 00	50,700 00	29,435 55	12,899 35
5	2,369	374	87	43,550 00	10,650 00	59,200 00	30,401 45	14,073 70
G. totals..	11,941	1,781	471	\$196,400 00	\$51,165 00	\$247,565 00	\$148,469 51	\$67,467 62
G. Average	47.7	7.1	1.89	\$1,336 05	\$710 62	\$1,509 54	\$593 84	\$269 87

Recapitulation of Table II.

HEAD OF FAMILY.			OTHERS IN FAMILY.								
Rate per day.	Days at work.	Earnings for the year.	Rate per day.	Days at work.	Earnings for the year.	Rate per day.	Days at work.	Earnings for the year.	Rate per day.	Days at work.	Earnings for the year.
73 61	10,706	\$17,086 16	\$33 53	12,119	\$3,144 90	\$15 61	7,223	\$3,960 22	\$5 07	2,280	\$1,324 00
74 57	11,017	16,468 45	31 92	11,165	7,578 33	20 12	6,796	4,150 47	5 90	2,190	1,288 75
73 07	10,191	14,665 33	31 23	12,193	7,539 86	19 80	8,257	4,559 24	7 61	3,902	1,898 80
73 51	11,013	15,536 20	33 26	12,338	7,823 75	16 49	6,701	3,821 10	5 88	2,445	1,254 60
70 86	11,319	16,327 75	35 67	11,409	8,506 40	16 93	5,820	3,832 80	7 13	2,260	1,734 50
\$71 12	54,306	\$81,001 89	\$165 61	59,224	\$39,643 24	\$88 96	34,797	\$20,323 83	\$31 59	13,077	\$7,500 55
\$1 43	217.22	\$324 00	\$0 66	236.89	\$158 57	\$0 58	228.98	\$133 63	\$0 56	229.42	\$131 59

Earnings, etc., of families whose children were employed for wages.

Running number.	Number in family.	Number employed for wages.	HEAD OF FAMILY.			Total earnings whole family.	Earnings of others outside head of family.
			Weekly earnings	Weeks employ'd	Earnings per year.		
1	6	2	\$9 00	48	\$432 00	\$441 60	\$9 60
2	8	2	7 50	48	360 00	372 00	12 00
3	8	2	6 00	32	192 00	336 00	144 00
4	8	2	9 00	48	432 00	576 00	144 00
5	5	2	6 00	24	144 00	230 40	86 40
6	5	2	6 00	12	74 00	146 20	72 20
7	5	2	8 00	24	112 00	208 00	96 00
8	6	2	9 00	48	432 00	468 00	36 00
9	9	3	10 50	48	504 00	864 00	360 00
10	9	4	7 50	48	360 00	840 00	480 00
11	7	2	6 00	48	288 00	432 00	144 00
12	10	3	10 50	48	504 00	674 40	170 40
13	7	2	7 20	48	345 60	489 60	144 00
14	8	2	5 40	48	259 20	374 40	115 20
15	12	3	5 40	8	43 20	325 20	282 00
16	14	2	6 60	40	264 00	384 00	120 00
17	6	4	14 00	40	560 00	1,049 60	489 60
18	12	3	18 00	32	576 00	760 80	184 80
19	8	2	6 75	40	270 00	366 00	96 00
20	5	3	10 00	48	490 00	708 00	228 00
21	6	5	9 00	24	216 00	897 60	681 60
22	8	3	7 50	48	360 00	840 00	480 00
23	8	2	13 00	48	624 00	768 00	144 00
24	7	2	10 00	40	400 00	490 00	90 00
25	8	5	9 00	48	432 00	886 60	454 00
26	9	3	12 00	28	336 00	468 00	132 00
27	3	2	10 00	28	280 00	364 00	84 00
28	8	2	18 00	32	576 00	590 00	14 00
29	9	5	6 00	40	240 00	596 00	356 00
30	7	3	9 00	48	432 00	684 00	252 00
31	7	3	12 00	48	576 00	770 40	194 40
32	8	2	12 60	40	504 00	612 00	108 00
33	9	4	12 00	40	480 00	1,076 00	596 00
34	7	2	9 00	40	360 00	374 40	14 40
35	4	2	8 10	40	324 00	338 40	14 40
36	8	2	12 00	40	480 00	566 40	86 40
37	6	2	15 00	40	600 00	636 00	36 00
38	8	3	8 10	48	388 80	754 80	366 00
39	6	2	9 00	40	360 00	540 00	180 00
40	3	2	9 00	48	432 00	440 00	8 00
41	7	2	15 00	40	600 00	624 00	24 00
42	6	2	9 00	28	252 00	282 00	30 00
43	7	3	7 50	40	300 00	553 00	253 00
44	8	4	19 00	36	684 00	1,339 00	655 00
45	4	3	7 40	48	355 20	801 60	446 40
Totals	329	119	\$436 55	1,780	\$17,224 00	\$26,337 80	\$9,113 80
Averages ..	7.3	2.65	\$9.70	39.6	\$382 76	\$585 29	\$302 33

Earnings, etc., for families whose children were employed for wages.

Running number.	WEEKS EMPLOYED AND EARNINGS PER WEEK AND YEAR OF OTHERS IN FAMILY.								
	Weeks employed	Weekly earnings.	Yearly earnings.	Weeks employed	Weekly earnings.	Yearly earnings.	Weeks employed	Weekly earnings.	Yearly earnings.
1									
2	4	\$2 40	\$9 60						
3	4	3 00	12 00						
4	48	3 00	144 00						
5	48	3 00	144 00						
6	24	3 60	86 40						
7									
8	20	3 60	72 20						
9	32	3 00	96 00						
10	12	3 00	36 00						
11	48	3 00	144 00	48	\$4 50	\$216 00			
12	48	3 00	144 00	48	4 50	216 00	48	\$2 50	\$120 00
13									
14	48	3 00	144 00						
15	36	2 40	86 40	20	4 20	84 00			
16	48	3 00	144 00						
17	40	2 40	115 20						
18	3 00		120 00	36	4 50	162 00			
19	40	3 00	120 00						
20	24	2 40	57 60	48	3 00	144 00	48	6 00	288 00
21	48	3 00	144 00	8	5 10	40 80			
22	32	3 00	96 00						
23	48	3 75	180 00	16	3 40	48 00			
24	32	7 50	240 00	32	4 50	153 60	28	9 00	252 00
25	48	6 00	288 00	48	4 00	192 00	12	3 00	36 00
26	48	3 00	144 00						
27	40	4 50	90 00						
28	5 00		200 00	32	6 00	192 00	4	3 00	12 00
29	28						20	2 50	50 00
30	24	3 00	84 00	16	3 00	48 00			
31	4	3 50	84 00						
32	32	3 50	14 00						
33	48	5 50	176 00	24	3 00	72 00	24	4 00	96 00
34	40	2 75	132 00	48	2 50	120 00	4	3 00	12 00
35	24	4 50	180 00	4	3 60	14 40			
36	40	4 50	108 00						
37	4	12 00	480 00	40	2 60	104 00	4	3 00	12 00
38	4	3 60	14 40						
39	24	3 60	14 40						
40	8	3 60	86 40						
41	40	4 50	36 00						
42	24	5 40	216 00	20	7 50	150 00			
43	4	7 50	180 00						
44	2 00	2 00	8 00						
45	3 00		24 00						
46	12	2 50	30 00						
47	48	2 75	132 00	44	2 75	121 00			
48	10 00		480 00	28	6 00	164 00	4	2 75	11 00
49	24	12 00	288 00	44	3 60	158 40			
Totals	1,376	\$185 25	\$5,824 60	610	\$79 15	\$2,400 20	196	\$38 75	\$889 00
Average	30.58	4.12	129 41	32.10	4.16	126 31	19.60	3.88	88.90

Earnings, etc., for families whose children were employed for wages.

Running number.	Number in family.	Number in family employed for wages	HEAD OF FAMILY.			Total earnings of whole family.	Total earnings of others in family.
			Weekly earnings.	Weeks employ'd	Yearly earnings		
46	6	2	\$12 00	48	\$576 00	\$720 00	\$144 00
47	8	4	7 50	48	360 00	483 00	123 00
48	9	3	12 00	48	576 00	829 00	253 00
48	4	2	12 00	48	432 00	1,296 00	864 00
50	8	2	9 00	48	432 00	648 00	216 00
51	9	4	12 00	48	576 00	1,104 00	528 00
52	5	3	8 10	48	388 80	523 20	134 40
53	9	2	12 00	48	576 00	648 00	72 00
54	9	3	12 00	48	576 00	730 00	154 00
55	6	4	12 00	40	480 00	714 50	234 80
56	9	3	24 00	28	672 00	720 00	48 00
57	11	4	7 50	48	360 00	844 00	34 00
58	8	3	9 00	48	432 00	752 00	320 00
59	6	4	14 00	32	448 00	760 00	312 00
60	6	5	14 00	48	672 00	1,730 00	1,058 00
61	8	3	8 10	48	388 80	820 80	432 00
62	6	3	6 72	28	188 16	340 56	152 40
63	8	3	6 72	48	322 56	348 96	26 40
64	6	3	6 75	32	216 00	244 80	28 80
65	8	2	6 72	24	161 28	238 08	76 50
66	6	4	5 40	28	151 20	418 20	267 00
67	8	3	7 50	32	240 00	366 00	126 00
68	10	3	6 80	48	316 80	633 60	316 80
69	8	2	12 50	48	600 00	629 66	29 66
70	9	2	9 00	48	432 00	453 96	21 96
71	9	3	9 00	40	360 00	523 20	163 20
72	14	5	10 00	48	480 00	1,275 40	798 40
73	8	5	5 40	48	259 20	880 80	621 60
74	8	3	7 50	48	360 00	463 20	103 20
75	5	3	9 00	32	288 00	657 60	369 60
76	8	2	6 70	36	241 20	338 40	97 20
77	12	3	7 50	40	300 00	588 80	288 80
78	7	3	7 50	48	360 00	835 20	475 20
79	5	2	8 50	48	408 00	523 20	115 20
80	6	3	10 50	48	609 00	820 00	211 00
81	8	3	7 50	48	360 00	734 40	374 40
82	10	3	6 60	48	316 80	710 40	393 60
83	10	2	6 72	48	322 56	437 76	115 20
84	9	2	6 75	48	324 00	439 20	115 20
85	12	2	9 00	48	432 00	547 20	115 20
86	9	2	9 00	36	324 00	417 60	93 60
87	6	3	7 50	48	360 00	586 80	286 80
88	7	3	7 50	48	360 00	620 00	260 00
89	9	3	12 00	28	336 00	630 00	194 00
90	10	3	11 60	48	556 80	698 80	142 00
Totals	362	134	\$415 88	2,144	\$17,931 16	\$29,627 58	\$11,696 42
Average	8	3	9.24	47.64	398.47	\$653 29	259 92

Earnings, etc., for families whose children were employed for wages.

Running number.	WEEKS EMPLOYED AND EARNINGS PER WEEK AND YEAR OF OTHERS IN FAMILY.								
	Weeks employed.	Weekly earnings.	Yearly earnings.	Weeks employed.	Weekly earnings.	Yearly earnings.	Weeks employed.	Weekly earnings.	Yearly earnings.
46	40	\$3 60	\$144 00						
47	32	2 00	64 00	44	\$1 25	\$55 00	2	\$2 00	\$4 00
48	48	5 00	240 00	4	3 25	13 00			
49	48	18 00	864 00						
50	48	4 50	216 00						
51	48	5 00	240 00	48	6 00	288 00			
52	48	2 40	115 20	8	2 40	19 20			
53	24	3 00	72 00						
54	44	3 50	154 00						
55	40	3 60	144 00	40	2 00	80 00	4	2 70	10 80
56	8	3 00	24 00	8	3 00	24 00			
57	48	6 00	288 00	40	4 50	180 00	8	2 00	16 00
58	40	5 00	200 00	40	3 00	120 00			
59	24	3 50	84 00	40	5 00	200 00	8	3 50	28 00
							48	4 50	216 00
60	48	10 00	480 00	48	7 50	350 00	4	3 00	12 00
61	48	3 00	144 00	48	6 00	288 00			
62	32	4 50	144 00	4	2 10	8 40			
63	4	4 50	18 00	4	2 10	8 40			
64	24	1 00	24 00	2	2 40	4 80			
65	32	2 40	76 80						
66	24	3 00	72 00	12	3 25	39 00	48	3 25	156 00
67	24	3 00	72 00	36	1 50	54 00			
68	44	3 60	172 80	48	3 00	144 00			
69	8	3 72	29 66						
70	6	3 66	21 96						
71	20	3 66	73 20	20	4 50	90 00	48	5 40	259 20
72	40	2 40	96 00	48	3 90	187 20	32	8 00	256 00
							48	3 55	170 40
73	48	2 40	115 20	48	3 00	144 00	48	4 00	192 00
74	28	2 40	67 20	12	3 00	36 00			
75	48	6 90	331 20	16	2 40	38 40			
76	36	2 70	97 20						
77	32	7 00	224 00	24	2 70	64 80			
78	48	2 40	115 20	28	7 50	360 00			
79	48	2 40	115 20						
80	48	2 00	96 00	48	2 40	115 00			
81	48	3 00	144 00	48	4 80	230 40			
82	16	3 00	48 00	48	7 20	345 60			
83	48	2 40	115 20						
84	48	2 40	115 20						
85	48	2 40	115 20						
86	36	2 60	93 60						
87	12	4 50	54 00	48	3 60	172 80			
88	48	4 50	216 00	20	2 25	44 00			
89	48	3 00	144 00	20	2 50	50 00			
90	28	2 25	62 00	40	2 00	80 00			
Totals ..	1,614	\$174 79	\$6,539 02	942	\$110 00	\$3,834 00	298	\$41 90	\$1,320 40
Average	35.89	3 90	145.31	30.4	3.55	123 70	27.09	3.81	120.00

Earnings, etc., of families whose children were employed for wages.

Running number.	Number in family.	Number in family employed for wages	HEAD OF FAMILY.			Total earnings for whole family.	Total earnings for others in family.
			Weekly earnings	Weeks employ'd	Yearly earnings		
91	3	2	\$10 00	48	\$480 00	\$560 00	\$80 00
92	6	3	9 00	48	432 00	506 00	74 00
93	5	4	7 50	12	90 00	607 20	517 20
94	10	2	15 00	48	720 00	741 00	21 00
95	6	2	7 00	24	168 00	184 00	16 00
96	6	3	8 00	24	192 00	313 00	121 00
97	9	2	10 00	48	480 00	492 00	12 00
98	6	2	9 00	36	324 00	348 00	24 00
99	9	2	7 50	36	270 00	370 80	100 80
100	6	3	7 00	32	224 00	384 80	160 80
101	9	2	6 00	44	264 00	273 60	9 60
102	9	2	7 00	48	336 00	480 00	144 00
103	9	2	6 00	48	288 00	334 00	86 00
104	9	3	6 00	16	96 00	441 60	345 60
105	6	2	6 00	48	288 00	432 00	144 00
106	5	2	7 00	48	336 00	508 80	172 80
107	6	3	14 00	36	504 00	712 00	208 00
108	5	3	6 00	32	192 00	432 00	240 00
109	8	2	7 50	32	240 00	336 00	96 00
110	7	5	15 00	48	720 00	1,632 00	912 00
111	6	4	10 00	36	360 00	864 00	504 00
112	7	3	9 00	32	288 00	468 00	180 00
113	7	2	6 00	48	288 00	528 00	240 00
114	6	2	9 00	32	288 00	342 00	54 00
115	9	3	10 00	16	160 00	406 00	246 00
116	9	5	9 00	48	432 00	1,152 00	720 00
117	10	3	13 50	36	486 00	746 00	260 00
118	6	2	7 80	40	312 00	396 00	84 00
119	9	3	7 50	32	240 00	420 00	180 00
120	8	2	12 00	48	576 00	586 00	10 00
121	11	3	8 00	36	288 00	449 00	161 00
122	7	3	9 00	48	432 00	716 00	284 00
123	9	2	7 50	32	240 00	317 00	77 00
124	8	5	9 00	24	216 00	728 00	512 00
125	11	3	9 00	48	432 00	671 60	239 60
126	6	2	15 00	40	600 00	612 00	12 00
127	6	3	12 00	28	336 00	612 00	276 00
128	8	2	9 90	40	406 00	418 00	12 00
129	5	2	12 00	32	384 00	396 00	12 00
130	6	3	9 00	48	432 00	666 00	234 00
131	5	2	9 00	24	216 00	222 00	6 00
Total	298	110	\$373 70	1,524	\$14,056 00	\$21,854 40	\$7,798 40
Average ...	7.27	2.7	9.11	37.2	\$342 83	\$533 04	\$190 21

Recapitulation of Table II.

1	329	119	\$436 55	1,780	\$17,224 00	\$26,337 80	\$9,113 80
2	362	134	415 88	2,144	17,931 16	29,627 58	11,696 42
3	298	110	373 70	1,524	14,056 00	21,854 40	7,798 40
G. Totals	989	363	\$1,226 13	5,448	\$49,211 16	\$77,819 78	\$28,608 62
G. Av'r'ge	7.55	2.77	\$9 36	41.59	\$375 66	\$594 64	\$218 39

Earnings, etc., of families whose children were employed for wages.

Running number.	WEEKS EMPLOYED AND EARNINGS PER WEEK AND YEAR OF OTHERS IN FAMILY.								
	Weeks employed.	Weekly earnings.	Yearly earnings.	Weeks employed.	Weekly earnings.	Yearly earnings.	Weeks employed.	Weekly earnings.	Yearly earnings.
91	33	\$2 50	\$80 00						
92	28	2 00	56 00	4	\$4 50	\$18 00			
93	48	2 65	127 20	24	2 25	54 00	48	\$7 00	\$336 00
94	12	1 75	21 00						
95	8	2 00	16 00						
96	44	2 75	121 00						
97	8	1 50	12 00						
98	12	2 00	24 00						
99	48	2 10	100 80						
100	44	3 00	132 00	12	2 40	28 80			
101	4	2 40	9 60						
102	48	3 00	144 00						
103	32	3 00	96 00						
104	48	3 00	144 00	48	4 20	201 60			
105	48	3 00	144 00						
106	48	3 60	172 80						
107	40	5 00	200 00	4	2 00	8 00			
108	40	4 00	160 00	32	2 50	80 00			
109	32	3 00	96 00						
110	48	4 00	192 00	48	3 50	168 00	48	2 50	120 00
							48	9 00	432 00
111	24	8 00	192 00	40	7 00	280 00	16	2 00	32 00
112	36	3 00	108 00	24	3 00	72 00			
113	40	6 00	240 00						
114	12	4 50	54 00						
115	40	5 40	216 00	12	2 50	30 00			
116	48	6 00	288 00	32	6 00	192 00	48	2 50	120 00
							40	3 00	120 00
117	32	3 25	104 00	48	3 25	156 00			
118	24	3 50	84 00						
119	40	4 00	160 00	8	2 50	20 00			
120	4	2 50	10 00						
121	24	6 50	156 00	2	2 50	5 00			
122	40	6 00	240 00	16	2 75	44 00			
123	28	2 75	77 00						
124	32	3 00	96 00	40	3 00	120 00	32	2 50	80 00
							36	6 00	216 00
125	48	4 50	216 00	8	2 95	23 60			
126	4	3 00	12 00						
127	40	6 00	240 00	12	3 00	36 00			
128	4	3 00	12 00						
129	4	3 00	12 00						
130	6	3 00	18 00	48	4 50	216 00			
131	2	3 00	6 00						
Total	1,304	\$146 15	\$4,589 40	462	\$64 30	\$1,753 00	316	\$34 50	\$1,456 00
Average	29.7	\$3 56	\$111 93	24.31	\$3 38	\$92 26	39.5	\$4 31	\$182 00

Recapitulation of Table II.

	1,376	\$185 25	\$5,824 60	610	\$79 15	\$2,400 20	196	\$38 75	\$389 00
	1,614	174 79	6,539 02	942	110 00	3,834 00	298	41 90	1,320 40
	1,204	146 15	4,589 40	462	64 30	1,753 00	316	34 50	1,456 00
G. Total	4,194	\$506 19	\$16,953 02	2,014	\$253 45	\$7,987 20	810	\$115 15	\$3,665 40
G. Ave	32.00	\$3 57	\$129 41	29.20	\$3 67	\$115 07	28.00	\$3 98	\$126 40

ANALYSIS.

As has been said, the above two tables show in detail the earnings, etc., for one year, 1898, of families whose condition in this and other respects was investigated because of the fact that children belonging to them who were either under the legal age-limit for such employment, or who looked very young for the nature of their duties, had been found employed in factories and shops.

The two tables, I and II, includes 250 and 131 families, respectively, or a total of 381. Each one of these had one child at work whose appearance was such as to cause an inquiry. Of these children the investigation revealed, that 301, or 79 per cent., were under fourteen years of age, and 80, or 21 per cent., were over fourteen but under sixteen years. Apportioned between the tables it is found, that of the children investigated, the first in order shows 195 under fourteen years and 55 under sixteen, and that the second has 106 under fourteen and 25 under sixteen years.

For each family in the tables the facts are presented as obtained. The facts on each page as well as for each table are summarized and averaged. The condition of the families may therefore be studied singly, in groups, or as a whole. In this analysis they are mostly considered in groups and as a whole.

Age of the father of the family. Number in family. Number employed for wages.

In order that the full meaning of the data may be more easily seen it was thought best to first explain it as a whole, as near as can be, in the order in which it appears in the tables. The first presentation in order will therefore show the average age of father, the average number of persons to each family, and the average number of persons to each who were employed.

Number in family, number working.

Sources.	Number of families reported.	Age of father or head of family.	Number of persons in family.	Number employed.
Totals Table I.....	250	11,941	1,781	721
Totals Table II.....	131	.....	989	363
Totals both tables	381	11,941	2,770	1,084
Averages	1	47.7	7.3	2.85

The age of the father was obtained in 250 cases, or in all which are included in table I. The age of the head of the family is an important item in all efforts in this line. In the first place a man's earning power depends largely upon his age. Then again property is seldom acquired until later in life.

The average age is 47.7 years. This figure looks high, but considering the fact that only 22 of those reported upon were under 40 years while 15 were over sixty it is plain that the average must be pretty well up in the years. It is interesting to notice how closely the average age, as computed on each page, corresponds to the average for all. In two cases it is almost exactly the same. In the other three it varies less than one-half of one per cent. either way. In the 131 presentations in table II no information regarding the age was obtained.

The number of persons in the family was obtained in all or 381 cases. The number in the family means a great deal whether they are wage earners or not. If a large proportion are wage earners and the earnings put to common use it also ought to follow that the family was in comparatively easy circumstances. If on the other hand the wage earners are few, or only one, the opposite is more likely to be true, barring of course other influences.

For table I we find, in the summaries, that the average number in the family, for the 250 families included, is 7.1. For table II, or the 131 families the average is 7.55 persons or a trifle higher. For both tables or 381 families the average is 7.3 persons.

The families are thus large. This appears not only from the rather high average of 7.3 persons, but also from the fact that there were 67 families of 10 persons or over, while there were only 31 with less than 5 persons each.

Not of the least in importance are the facts which bear upon the number in each family who were employed for wages. These facts were not always easily obtained. For one reason or another there is usually a well defined opposition to all questions of this nature. In this case, however, the investigation was so complete that there was no escape, and the data obtained is correct. In studying tables I and II, however, it should be borne in mind that there is a difference in the way in which the returns, relat-

ing to the number employed, were tabulated in the two tables. In table I the numbers given do not include the head of the family, while in table II the father also is included. In order therefore to bring the tables upon a uniform basis and show in each case all the wage earners, including the head, the totals for this column in table I should be increased by the whole number of entries, or by 250. This increase makes the correct average for table I 2.89 instead of 1.89.

The average number of persons employed to each family for both tables is 2.85. This is practically three persons to the family, and is good evidence of the fact that no time is lost in making wage earners of the children. No family was met with in which there was less than one wage earner besides the father. In 152 families there were three wage earners, in 68 there were four, in 18 there were five, and in one family six wage earners, including the father. As those having five and six wage earners are not entered separately it appears from this that there were only 162 families which had more than two wage earners. Looking at the matter from this standpoint it certainly seems that it was not absolutely necessary to the support of the family that their children under fourteen should be employed.

PROPERTY OWNED.

An effort was made to ascertain the value of all property owned outside of their household effects. Questions to this effect were not, as a rule, very favorably received. Many of the answers were evasive. The kind of property owned was not very clearly explained. Still it is believed that most of those who owned property and were asked regarding it were made to disclose this fact as well as the value of their interest in the same. The property thus reported was roughly classed as real and personal. The real property consisted mostly of partial or full ownership of their home, other lots in the city or farm land. Their personal property was mostly found to be money on deposit or loaned out on securities.

The following table shows the total value of all such property reported and the average value to each family when divided equally among those owning such property:

Property owned by families.

	Number reported.	Equity in home or real property.	Personal property.	All property.
Total Table I	250	\$196,400 00	\$51,165 00	\$247,565 00
Number reported		147	72	164
		\$196,400 00	\$51,165 00	\$247,565 00
		\$1,336 05	\$710 62	\$1,509 54

Only those who are included in table I were asked regarding their property. Of these 164 or 65.6 per cent. reported that they owned property. Classified as to kind, it is found that 92 owned both real and personal property, that 55 owned real property only and that 17 owned personal property only, while 86 owned no property.

Above table shows that the total value of the property reported was \$196,400 for real and \$51,165 for personal, or a total of \$247,565. The table also shows that those owning this property numbered 147 for real and 72 for personal. Deducting the 55 who owned real estate only and who are included in the above 147, we obtained a total for the property owners of 164. If the property in each case is shared alike by those owning it the average stands as follows: Real \$1,336.05, personal \$710.62, all property \$1,509.54. This average seems higher than the impression upon this point received from observation. It should be borne in mind, however, that a large proportion of the class investigated is exceptionally thrifty.

DAYS EMPLOYED.

The data under this head is so closely related to that under the rate of wages and earnings that before explaining each in detail it may be well to say something about the whole. With reference to the earnings for any fixed period, the time employed is as important as the rate paid. Many workers, however, kept no exact record either of the time employed or of their earnings. One person could tell precisely how many days or weeks he had worked during the year at the different rates of wages, but had not computed the amount earned. Another was able to tell off hand his entire earnings for the year, and, of

course, the rate, but not the number of days employed. In order to get definite results, therefore, much round-about work in the way of inquiry, figuring and adjusting was necessary. Everything necessary in this respect, however, was done and the figures as they stand are as near correct as they can be made or as need be for all practical purposes.

The time given here is, therefore, that which was computed by us from the amount earned and the rate of wages as given. This, however, does not detract from its value. It should also be noticed that, for table I, the day is the unit for employment and wage payment, while in table II it is the week. This may cause some confusion, but was rather unavoidable because it was reported in this way. For the purposes of this analysis, however, the weeks were in all cases reduced to days. Of course it is not claimed that the figures are in all cases exact. They are so nearly correct, however, that the results are not materially affected. The figures relating to employment, given here, throw much light upon both earnings and unemployment.

The next presentation in order shows for each table the total days employed for all persons included as well as the persons reported and average days employed for each group.

Days employed.

Classification.	Father, days.	Other member, d. & s.	Other member, days.	Other member, days.	Totals.
Total Table I.....	54,306	59,224	34,797	13,077	161,404
Total Table II.....	31,555	26,277	12,916	5,544	76,292
Total both tables....	85,861	85,501	47,713	18,621	237,686
Number reported	381	381	221	86	1,069
Average days employed ..	225.35	224.41	215.19	216.52	222.36

We see from the above table that the average working time for the father was 225.35 days, and that for the other three groups the time was 224.41, 215.19, 216.52 days respectively. If 300 working days is considered a year, the father was on the average employed 75.15 per cent. or three-fourths of the working time. This proportion also holds good for the second group in order. For the third and fourth it is somewhat lower, being 71.73 and 72.17 per cent.

The following classification of the working time of the head of the family is interesting:

Classification.	No. employed.	Per cent.
100 days and less	33	8.66
150 but not less than 101 days.....	39	10.24
200 but not less than 151 days	73	19.16
250 but not less than 201 days	78	20.47
Over 250 days	158	41.47
Total	381	100.00

In these presentations the time of employment is classified so as to show the number and their percentage of the whole who were employed between a given number of days. Thus we see that 33 or 8.66 per cent. were employed 100 days or less during the year. Those employed between 101 and 150 days, both inclusive, constituted 10.24 per cent. Looking at the table as a whole, we find that the persons increase in number with the increase in length of the working time. The last item shows that 158, or 41.47 per cent., were employed 250 days or over during the year. As seen above, the average working time for the head of the family was 225.35 days. From this it is clear that the range or time of unemployment was considerable.

The total days of employment for both tables was 237,696; the total number of workers was 1,069. This gives an average of 222.36 days to each worker.

RATE OF WAGES PER DAY.

We now come to the rate of wages. In the rate of wages paid to workers of all kinds and classes of work there is as wide a fluctuation as in the time of employment. Indeed, the differences are so great and many that to obtain the exact rate for all workers is an almost hopeless task. Even for a small group or class an attempt in this direction is beset with many discouragements. To give the rate at the time being is, of course, a simple matter to any worker. To determine the rate for the year is quite different. In this investigation persons were often met with who had worked at several different rates during the year. In such cases all that could be done in this instance was to find out the number of days worked and the total earnings

for the year, and from these figures compute the rate per day. The individual rates, as shown in the tables, are therefore often the average rates for the year. For a large proportion of the workers, however, the rate per day had remained unchanged and in all such cases the rate shown is absolute.

Average rate of wages per day.

Classification.	Father.	Other member.	Other member.	Other men bers.	Total, all members.
Table I	\$371 12	\$165 61	\$88 96	\$31 59	\$657 28
Table II	204 35	84 49	42 09	19 14	350 07
Both tables	\$575 47	\$250 10	\$131 06	\$50 73	\$1,007 35
Number reported upon....	381	381	221	86	1,069
Average rate of wages per day	\$1 56	\$0 65	\$0 60	\$0 59	\$0 942

The preceding table thus shows for each group of workers, as well as for all, the average rate of wages during the year as computed from the totals of tables I and II.

This table, as the one preceding it, is made up of the figures for the head of the family and for three groups of others in the family who were wage earners. There is also one column for the results for all.

As to the average wages in each case we find that for the head of the family it was \$1.56 per day, and that for the other groups in order it stood at \$.65, \$.60, and \$.59 per day, while the average for all was a trifle over 94 cents per day. The average for the other groups, or exclusive of the first or father, was 63 cents. Comparing the wages in the different groups we find that that of the father exceeds that of the others by an amount varying from 58 to 63 per cent. This plainly indicates that the other workers consisted mostly of young persons and children.

The following classification of the rate of wages of the head of the family may also prove of interest:

Classification.	No. persons.	Per cent.
\$1.00 and less	42	11.02
From \$1.00 to \$1.25 inclusive.....	103	27.04
From \$1.25 to \$1.50 inclusive	101	26.50
From \$1.50 to \$1.75 inclusive	34	8.92
From \$1.75 to \$2.00 inclusive	40	10.50
Over \$2.00	61	16.02
	381	100.00

We find from this statement that 42 heads of families, or 11.02 per cent. of the whole, received \$1.00 per day or less, which means an average considerable below this amount; and that 61, or 16.02 per cent., received over \$2.00 per day. The highest proportion is found for those who received from \$1.00 to \$1.25 per day, and lowest for those who received from \$1.50 to \$1.75 per day. Those who received less than \$1.50 per day constituted 64.56 per cent. of the whole, while those whose wages thus was above \$1.50 made up only 35.44 per cent.

AVERAGE EARNINGS TO EACH WAGE EARNER.

The next table in order shows the average earnings for the year to each worker. The averages in this case were obtained by dividing the total earnings for all with the total number of persons whose earnings were included. As each of these persons reported their earnings correctly, and as all, whose earnings were thus included in the dividend, were also included in the divisor the figures as given must be correct. The averages obtained by this method differ entirely from those which are had from dividing the total number employed by the amount paid out as wages by employers. The criticisms directed against the latter method do not apply to the averages in these tables. This should be borne in mind by those who may have occasion to use these figures.

Average earnings to each member for the year.

	Father.	Other member.	Other member.	Other member.	Total, all members.
Table I.....	\$81,001 89	\$39,643 24	\$20,323 83	\$7,500 55	\$148,469 51
Table II.....	49,211 16	16,953 02	7,987 20	3,655 40	77,816 78
Both tables	\$130,213 05	\$56,596 26	\$28,311 03	\$11,155 95	\$226,286 29
Persons rep. upon.....	381	381	221	86	1,069
Average earnings—year—	\$341 77	\$148 54	\$128 10	\$129 84	\$211 68

As to the average earnings of the various members of the families we find, in above table, that the fathers earned \$341.77 each, and for each one in the three other groups the average in order was \$148.54, \$128.10, \$129.84. The amount to each, when all are included, was \$211.68. The earnings for each

group are easily ascertained. It will be seen that in each case the total earnings as well as the number by whom earned, are given. Thus the total earnings for all was \$226,286.29, while the number of persons whose earnings were included in this amount was 1,069.

Compared to the large proportion of the heads of the family who received less than \$1.50 per day the above average or \$341.77 may seem high. The apparent discrepancy, however, is accounted for by the fact that quite a large proportion of those included were skilled hands who received a relatively high wage.

AVERAGE EARNINGS TO EACH FAMILY.

In the preceding table was shown the average earnings to each group of workers and to each worker. In the next table will be found the average earnings to each family. As no family had less than two wage earners, the earnings of the same are plainly an entirely different matter from the earnings per worker. It is a fact that in most cases the second, third, etc., wage earner was a young person or child. Still the amount contributed from this source to the family income was considerable. Since it is the chief purpose of this investigation to show as much as possible about the income, or economic condition of families whose children we had found it our duty to interfere with, it was thought best to present their earnings in detail.

Earnings of families.

Classification.	Number reported.	Earnings of father.	Earnings of others.	Earnings of whole family.
Total Table I.....	250	\$81,001 89	\$67,467 62	\$148,469 51
Total Table II.....	131	49,211 16	28,608 62	77,819 78
Total both tables.....	381	\$130,213 05	\$96,076 24	\$226,289 29
Average	191	\$341 77	\$252 17	\$593 94
Percentages		57.50	42.50	100.00

In the above table the earnings of the head of the family are again presented in order to bring it into comparison with that of the others. The table thus shows that the average earning

to each family were \$593.94, of which the father contributed \$341.77, or 57.50 per cent., and the other members together \$252.17, or 42.50 per cent. The earnings of each family thus practically amounted to \$50 per month. As a whole the figures in the above table emphasize very forcibly the importance of the earnings of the other members of the family. In fact the earnings of the father alone would in many cases have furnished a very slim subsistence. Whether in such cases their meager earnings was the result of causes over which they had no control or of shiftlessness could not always be ascertained. Instances of both were met with.

Summaries of the preceding tables and analyses.

Classification of employees.	Number reported upon.	Average number of days employed.	Average wages per day to each worker.	Average earnings per year to each worker.	Average earnings to each of 381 families.
Head of family (father)..	381	226.35	\$1.56	\$341 77	\$341 77
Other member, 2d group..	381	224.41	\$.65	\$148 54	\$148 54
Other member, 3d group..	221	215.19	.60	128 10	74 36
Other member, 4th group..	86	216.52	.59	129 84	29 27
Ave. exclusive of father..	688	220.70	\$.633	\$139 64	\$252 17
Ave. father included.....	1,069	222.36	\$.942	\$211 68	\$593 94

Number of families investigated, 381; number employed outside of head of family, 688; total persons employed, 1,069.
 Average age of head of family (father), .477. Average number of persons to each family, 1.7. Average number of persons employed to each family, 2.31.
 Of the 250 asked regarding it 164 reported that they owned property outside of their household effects. The average value of this property to each one reporting was \$1,509.54.

The above table and notes aim to show some of the more important facts which have been brought out through the preceding tables and analyses. The table is headed, the number reported upon, the average number of days employed, the average wages per day to each worker, the average earnings to each worker and the average earnings to each one of the 381 families included.

The first line under the headings gives the averages enumerated for the father; the second, third and fourth lines show the averages to each worker in the second, third and fourth groups; the fifth line shows the averages to each in the three groups, exclusive of the father; and the sixth line gives the averages to each when all workers are included.

In the notes we find the number of families and workers therein who were investigated, the average age of father, the average persons and persons employed to each family, and the number owning property and the average value of same to each such owner.

Up to this point the analysis of tables I and II have been chiefly concerned, with the results as a whole. The aggregates have been presented in such a way as to show, among other things, the average time employed, and wages and earnings of the workers and families included. While thus much has been shown that bears directly upon their condition, the question as to whether this condition was such that it was to the best interest of all concerned, including the state, that their children should be employed, has not been answered. This method alone is also insufficient to answer this. The main reason for this is that considerations are involved the force of which cannot be measured by statistical data. Of all the facts to be considered, however, in the settlement of the child labor problem none are of greater importance than those which relate to the economic condition of the parents and the children themselves. The very first thought even that enters one's mind, when the subject is brought up, runs back to this very point. Poverty always attracts sympathy. For a poor family the feeling is often so strong that both individuals and society are silently permitting the future of the child to be jeopardized for the sake of the immediate assistance it may render the family. Such sympathy is clearly misdirected.

Nevertheless this seems to be the trend at least until all sides have been heard and discussed. But poverty is not the only motive for making children become wage earners at an age when this is a mental and physical injury to them. Other and less honorable forces are at work and often also the most effective. The proportion of children who are forced into factories, etc., for their subsistence is smaller than most people are even ready to believe. In most cases the conditions are such that the employment of the children should not be tolerated. Of this, however, the public is usually in ignorance. Reliable information is therefore of the first importance to all intelligent action in this line.

For purposes of further illustrations the data in tables I and II have been classified with reference to the earnings of the head of the family and the age of the child whose employment caused the family to be investigated.

The classification as to earnings was made upon the following basis: Families whose head had earned less than \$100 during the year were included under less than \$100; families whose head had earned \$100 but less than \$200 were included in that class; those where his earnings were \$200 but less than \$300 were included in the class bearing that heading. There is thus one class for every one hundred up to the point where the seven hundred a year families were reached. All those where the father had earned \$700 or over during the year were included in that class regardless of the amount. In all the families are thus divided into eight classes.

One class for each hundred in earnings was thought sufficient. It is possible, however, that a more minute classification would have served the purpose better. To a poor family \$100 means a great deal. A family who would suffer with only \$200 a year may have the more important wants fairly well satisfied with \$299. One hundred dollars may for these and other reasons be looked upon as too wide a margin from which to compute the average, particularly for the classes with less than \$400 a year. Those who may hold this view, or have occasion for a closer examination of the figures, are referred to the original tables where the actual earnings for each family are given in detail.

In the classification as to age, families with children under fourteen years of age employed, or who were in violation of the law, were placed under one head; and families, with children fourteen years but apparently too young for their duties, were placed under another. Two classes only are thus found in this case. As it was not proven that those whose children were over fourteen were violating the statute, the above division may seem unnecessary. However, when it is remembered that the condition of the children in these cases was such that it was thought necessary to look them up, the classification appears proper.

The presentation of the data as thus classified is made chiefly in three tables. The first of these, in order, includes those whose children under fourteen years were employed; the second

in order includes those where they were past this age but still looked very young; the third includes all families investigated.

Number in family, number working and earnings for the year of families whose children under 14 years were employed.

CLASSIFICATION OF EARNINGS.	NO. OF FAMILIES INCLUDED		No. in family.	No. working.	EARNINGS OF FAMILIES.				
	Num-ber.	Per-cent- age.			Father	Others in family.	Whole family.	Child- ren under age.	Less child's earn- ings.
Less than \$100	9	2.99	8.44	2.55	\$69 49	\$273 50	\$342 95	\$103 63	\$239 32
\$100 but less than \$200	49	16.31	7.10	2.00	153 60	262 44	416 04	89 48	326 56
\$200 but less than \$300	74	24.58	7.50	2.20	247 78	207 39	455 17	32 25	422 92
\$300 but less than \$400	79	26.24	7.80	2.12	346 65	216 67	563 32	89 70	473 62
\$400 but less than \$500	55	18.27	7.75	2.30	440 23	203 73	643 96	86 01	557 95
\$500 but less than \$600	15	4.98	7.90	2.60	542 89	232 95	775 84	76 76	699 08
\$600 but less than \$700	16	5.31	7.90	2.25	627 87	240 90	868 78	62 35	806 43
\$700 and over	4	1.32	8.00	2.50	734 75	377 82	1,112 57	126 25	1,086 32
Averages	301	100.00	7.70	2.90	\$331 50	\$226 60	\$558 10	\$73 69	\$474 31

Number in family, number working, and earnings for the year of families whose children under sixteen but over fourteen years of age were employed.

CLASSIFICATION OF YEARLY EARNINGS.	NO. OF FAMILIES INCLUDED.		No. in family, average.	No. working, average.	EARNINGS OF FAMILIES.				
	Num-ber	Per-cent- age.			Father	Others in fami- y.	Whole family.	Child- ren under age.	Less child's earn- ings.
Less than \$100	2	2.5	5.00	2.00	\$45 00	\$274 15	\$319 15	\$113 95	\$205 20
\$100 but less than \$200	7	8.75	8.00	2.00	152 50	506 00	658 50	210 71	447 79
\$200 but less than \$300	13	16.25	7.46	1.91	254 40	283 93	538 33	100 84	437 49
\$300 but less than \$400	27	33.75	7.40	1.96	354 28	279 07	633 34	162 13	471 21
\$400 but less than \$500	17	21.25	7.17	1.88	433 15	446 95	880 11	245 13	634 98
\$500 but less than \$600	5	6.25	8.20	2.10	561 60	199 68	761 28	106 08	655 20
\$600 but less than \$700	7	8.75	7.00	1.28	614 00	244 17	858 17	179 89	678 28
\$700 and over	2	2.5	4.50	1.10	1,250 00	224 00	1,474 00	224 00	1,250 00
Average	80	100.00	7.40	1.90	\$387 50	\$325 88	\$713 38	\$172 46	\$540 92

Classified earnings of all families.

CLASSIFICATION.	No. INCLUDED.		No. in family.	No. working.	EARNINGS OF FAMILIES.				
	Num-ber.	Per-cent- age.			Father	Others in family.	Whole family.	Children under age.	Earnings of family less that of child under age.
Less than \$100	11	2.89	7.6	2.45	\$65 04	\$273 61	\$338 65	\$105 50	\$233 15
\$100 but less than \$200	56	14.70	9.00	2.01	153 45	292 53	446 34	104 64	341 70
\$200 but less than \$300	87	22.83	7.37	2.14	248 67	218 82	467 49	42 50	424 99
\$300 but less than \$400	106	27.82	7.68	2.08	348 59	242 00	590 59	108 15	482 44
\$400 but less than \$500	72	18.90	7.61	2.16	438 53	261 16	699 72	123 65	576 07
\$500 but less than \$600	20	5.25	8.00	2.65	547 57	224 63	772 20	84 09	688 11
\$600 but less than \$700	23	6.04	7.60	1.95	623 21	242 32	865 54	98 12	767 42
\$700 and over	6	1.57	6.83	2.00	906 50	326 54	1,233 04	158 83	1,074 21
Total and avs.	381	100.00	7.7	2.85	\$341 77	\$252 17	\$593 94	\$105 64	\$488 30

In form, the tables are precisely alike. One general explanation will therefore suffice for all. In each case and for each class of earnings they show the number and percentage of families included, and the number of persons and workers to each family. In the same way they also show the average earnings for the year of the father, for all others in the family, for the whole family, for the children investigated, and for the whole family less that for the children investigated. The tables are carefully prepared, comprehensive, and deserve the closest attention.

The three preceding tables cover practically everything that has been presented in this connection and a great deal besides. Among other things they show in a compact or concise form the classified earnings not only of the 301 families each of which permitted the employment of a child under fourteen, but of 80 other families, each one with a child just over the legal age in the factories, and also for these two classes, or 381 families, when presented together or when combined.

The best way to study these tables is by classes. For this reason still another table is presented. In this the classified results in each of the three tables is brought together under the same head. Thus, for instance, under "less than \$100" in the next table will be found all the data in this class in the three preceding tables. This combination of the results will make comparisons easier and increase their value.

Classification of Results.

Less Than \$100.

Classification of families as based upon age of child investigated.	No. of Families.		Number in family.	Number working.	Earnings of Families.				
	Number.	Per cent. age of totals.			Father.	Others.	Whole family.	Child under age.	Of family less than of child under age.
Under 14 years.....	9	2.99	8.44	2.55	\$69 49	\$273 50	\$342 95	\$103 63	\$239 72
Over 14 years	2	2.50	5.00	2.00	45 00	274 15	319 15	113 95	205 20
Both	11	2.89	7.6	2.45	65 04	273 61	333 65	105 50	233 15

\$100 But Less Than \$200.

Under 14 years	49	16.31	7.10	2.00	\$153 60	\$262 44	\$416 04	\$89 48	\$326 56
Over 14 years	7	8.75	8.00	2.00	152 50	506 00	658 00	210 71	447 79
Both	56	14.70	9.00	2.01	153 45	292 53	446 34	104 64	341 70

\$200 But Less Than \$300.

Under 14 years	74	24.58	7.50	2.20	\$247 78	\$207 39	\$455 17	\$32 25	\$422 92
Over 14 years	13	16.25	7.46	1.91	254 40	283 93	538 33	100 84	437 49
Both	87	22.83	7.37	2.14	248 67	218 82	467 49	42 50	424 99

\$300 But Less Than \$400.

Under 14 years	79	26.24	7.80	2.12	\$346 65	\$216 67	\$563 32	\$89 70	\$473 62
Over 14 years	27	33.75	7.40	1.96	354 28	279 07	633 34	162 13	471 21
Both	106	27.82	7.68	2.08	348 59	242 00	590 59	108 15	482 44

\$400 But Less Than \$500.

Under 14 years	55	18.27	7.75	2.30	\$440 23	\$203 73	\$643 96	\$96 01	\$557 95
Over 14 years	17	21.25	7.17	1.88	433 15	446 95	880 11	245 13	634 98
Both	72	18 90	7.61	2.16	438 53	261 16	699 72	123 65	576 07

\$500 But Less Than \$600.

Under 14 years	15	4.98	7.90	2.60	\$542 89	\$232 95	\$775 84	\$76 76	\$699 08
Over 14 years	5	6.25	8.20	2.10	561 60	199 68	761 28	108 08	655 20
Both	20	5.25	8.00	2.65	547 59	224 63	772 20	84 09	688 11

\$600 But Less Than \$700.

Under 14 years	16	5.31	7.90	2.25	\$627 87	\$240 90	\$868 78	\$52 35	\$906 43
Over 14 years	7	8.75	7.60	1.28	614 00	244 17	858 17	179 17	678 28
Both	23	6.04	7.60	1.95	623 21	242 32	865 54	98 12	767 42

\$700 And Over.

Under 14 years	4	1.32	8.00	2.50	\$734 75	\$377 82	\$1112 57	\$126 25	\$1086 32
Over 14 years	2	2.5	4.50	1.10	1,250 00	224 00	1,474 00	224 00	1,250 00
Both	6	1.57	6.83	2.00	906 50	326 54	1,233 04	158 83	1,074 21

Averages For Each Table.

Under 14 years	301	100.00	7.70	2.82	\$331 50	\$226 60	\$558 10	\$73 69	\$474 37
Over 14 years	80	100.00	7.40	2.90	387 50	326 85	713 38	172 46	540 95
Both	381	100.00	7.6	2.85	341 77	252 17	593 94	105 64	488 30

The above table may be said to be a summary of the three tables preceding it. As these three tables embody practically everything of any greater importance that has developed through this inquiry, the above table virtually amounts to a classification of the results obtained.

In form the above table differs but little from those of which it is made up. The presentations are made under "Classified Earnings." In each class those of the table showing the data for families for each of which a child under 14 years had been found employed is presented first. Next in order is the data of the table for families for each one of which a child just over fourteen years had been found employed. The last is the average for all as found in the last of the three tables in question. The data is therefore presented here in the same order as the tables from which it is taken. In the following analysis this classification of families is referred to as "first," "second" class, and the last embracing both as "all."

The first presentation in order is that for which the earnings for the year of the father or head was "less than \$100." Under this 11 families are included. Of these 9, or the first in order, are among those who in each case permitted a child under 14 years to be employed, and 2, or the second in order, are among those who in each case had a child at work which upon investigation was found to be over 14 years of age.

As the last class in the tables shows the number of families, each with one child under 14 years of age at work, was 301, and the number, each with a child over 14 years at work, was 80, making the total, investigated 381. The families included in the first presentation therefore constitutes 2.99, 2.50 and 2.89 per cent. of their respective totals.

For each of the 9 families in this presentation the average earnings in detail and as a whole was: Father \$69.49, others \$273.50, all in family \$342.95, for child investigated \$103.63, for whole family less amount for this child \$239.32. For each one of the 2 families the earning was: Father \$45.00, others \$274.15, whole family \$319.15, for child investigated \$113.95, whole family less amount for this child \$205.20. Combining both classes of families the average to each stands: Father \$65.04, others \$273.61, whole family \$338.65, child investi-

gated \$105.50, whole family less amount for the child in question \$233.15.

The average earnings to each of 11 families was thus \$338.65. Of this the father contributed 19.2 per cent., child investigated 31.2 per cent., and others in family 49.6 per cent.

What strikes one most forcibly in this is the extremely low earnings of the head or father. Of the whole his proportion was less than one-fifth, while that for the child investigated was nearly one-third. The contrast here is certainly remarkable. It suggests an inquiry into the causes. The reasons usually given for the limited contribution of the father was sickness and lack of employment. Whether this was really the case we were not in position to ascertain. From all appearances these families were among the more unfortunate. But no matter what the causes, the conditions were such that the earnings of children, who were illegally employed, was a much needed addition in the family income. It must certainly be admitted that as far as the family goes the law was in these cases violated under very mitigating circumstances. This statement is not intended to imply that the employment of these children was to the best interests of all concerned. Such cases, particularly when chronic, should be relieved through other means than the struggle of the little ones, who are in no way responsible for the condition.

\$100 but less than \$200 is the next presentation in order. It includes the data for 56 families, of which 47 come under the first class and 7 under the second. The average earnings to each one of the 56 families was in detail: Father \$153.60, others \$292.53, whole family \$446.34, child investigated \$104.64, whole family less this amount for child \$424.99.

This, as said, are the averages for the 56 families. The figures for each class of families in some instances correspond very closely to these; in others there is a wide divergence. Thus for the father the amount is about the same in the three cases. For others in the family the figures read \$262.44 for the first class, \$506.00 for the second, and \$292.53 for all. For the second the amount was thus practically twice as large as for the first, and owing to the greater number of families in the first much greater than the average for both. This excess in the earnings

for others is felt in the total average earnings for the whole class, as the figures plainly show.

The total average earnings to each one of the 56 families was \$446.34 for the year. Of this the father contributed 34.4, the child under age 24.4, and others in the family 42.2 per cent. From this it is seen that the earnings of the child is one-fourth of the total. While the average earnings to each family, less the amount for the child in question, was \$341.70, the fact remains true in this case also that the earnings of the children might be greatly needed by, at least, a large proportion of these families. The presentation particularly illustrates the importance of the earnings of other members outside of the father, and suggests the opportunities for shiftlessness might lead to in some cases.

\$200 but less than \$300.—This is the next or third presentation in order. In all it includes 87 families. For 74 of these the earnings for the year was: Father \$247.78, others \$207.89, whole family \$455.17, children investigated \$32.25, family less amount for this child \$422.92. For the other thirteen families: Father \$354.28, others \$279.07, whole family \$633.34, child investigated \$162.13, family less amount for this child \$471.21. For all families the figures stand: Father \$248.67, others \$218.82, whole family \$467.49, child investigated \$42.50, family less amount for this child \$424.99.

For the 87 families the average earning to each was, as seen, \$467.47. Of this the proportion earned by the father footed up to 53.2 per cent. or a little over one-half, the part of others to 37.7 and of the investigated to 9.1 per cent.

As compared to preceding presentations the proportion of the earnings that was contributed by the father was here relatively high and that of the child in question low. The average for all after deducting amount for child is also fairly high, being \$424.99.

\$300 but less than \$400.—In this presentation 106 families, or 27.82 per cent. of the whole number investigated, are included. Of these 79 come under the first class and 27 under the second.

To each of the 106 families the figures as to earnings stood as follows: Father \$348.59, others \$242.00, whole family

\$590.59, child investigated \$105.75, whole family less that for child investigated 483.44.

For each of the two classes of families the figures do not in most cases greatly differ from these, the greatest variation being in the earnings of others in family including the child investigated.

As seen, the average earnings for the whole family was \$590.59. In this the share of the father is 59 per cent., the share of the child investigated 18.3 per cent., and that of the others in family 22.7 per cent. The share for the father is greater here than in any of the previous cases.

\$400 but less than \$500.—In this the fifth presentation in the table 72 families are included. Of these 55 come under the first class and 17 under the second. The former thus includes over three times as many families as the latter.

As to earnings we find that the average to the 72 families was for the father \$438.53, others \$261.16, whole family \$699.72, child investigated \$123.65, whole family less amount for child \$576.07. Of the total earnings the father thus made up 62.7 per cent., the child investigated 17.6 per cent. and others 19.7 per cent.

Here also the earnings of the children for the families in the second class is much greater than is the case for the first, and, as the tables show, this is true of all presentations. The reason for this is undoubtedly found in the fact that the children in that class were older, got bigger wages and, perhaps, worked more steadily.

The three next presentations in order in the table are made up of families in which the earnings of the head was \$500 but less than \$600; \$600 but less than \$700; and \$700 and over, respectively. The families in these cases number 20, 23, and 6. As the earnings increase the families thus decrease. This has been noticeable in all since fourth presentation. Up to that point, however, the contrary was true. Outside of the gradual increase in the earnings of the father and the whole family, the presentations mentioned presents no features not common to those preceding them, hence more detailed explanations are unnecessary. Some space, however, will be given to the last one in the table or that which shows the averages for each of the two classes of families included, as well as for all families.

Averages for each table or class.—This is the last presentation in the table. It shows the results for all in each of the three preceding tables, or for each class of families as well as for all.

First in order comes the 301 families each having one of their children under 14 years of age employed in violation of the law. To each of these families the average persons, persons employed and earnings are shown. As to the wages to each we find the figures to be for father \$331.50, others \$226.60, whole family \$558.10, child under age \$73.69, whole family less amount for child under age \$474.31. The average income for the year to each of these families was thus \$558.10 when amount paid child under age is included; when deducted the income is reduced to \$474.31. While, because of circumstances, there was a great temptation to violate the law for the families who came in the first and partly in the second presentation in order, this does not seem to be true for the great majority of them.

Next we have the 80 families each with a child employed who though past 14 years or the legal age limit seemed young, or rather weak for the work required. As to earnings for these we find the amount to each as follows: Father \$387.50, others \$325.88, whole family \$713.38, child investigated \$172.46, whole family less amount for child \$540.92. With an average of \$713.38 with the child's earnings, and \$540.92 without it there seems no good reason for burdening the child with too heavy labor. A few exceptions may be noted in the above presentations, especially by those who hold a child should become a wage-earner at the earliest date possible.

Combining these two classes of families we obtain the following results: Total number of families investigated 381. Earnings to each in detail, father \$341.77, others \$252.17, whole family \$593.44, child investigated \$105.64, whole family less earnings of child \$488.30. As already explained the average income to each family was \$593.94 or practically \$50 per month.

Comparing the earnings for the two classes of families and the average for both it will be noticed that figures for the second class, or 80 families, are invariably the highest. Thus we find that for the father the average in the first case is \$331.50, in the

second \$387.50, while for both it is \$341.77. For the earnings of others in the family including the child investigated the differences are still greater. The reasons why the earnings for the second class are higher are not easy to give, particularly in the case of the father. For others in family the excess is undoubtedly largely due to the fact the children employed were older and more efficient and therefore received a higher rate of wage.

Of the total average earnings for all, or \$593.94, the father contributed 57.6 per cent., the child investigated 17.8 per cent., and others in the family 24.6 per cent.

The above presentations embraces all the families investigated in which the father or head was living, or living with the family. As has already been said several children were also discovered at work who belonged to families where the father was either dead or separated from. In all 38 such families were visited. Of these 24 had each one child under 14 years of age at work, 6 had each two children under this age at work, and 8 had no children at work that come strictly speaking within the law though close enough for investigation. Although only 30 out of the 38 families were thus in conflict with the law, 6 out of the 24 had, as said, each two children under age, thus bringing the number of illegally employed children up to 36. The data obtained in relation to these families are presented in the following table.

Earnings of families where father or head was not employed.

Running number.		WEEKS EMPLOYED AND EARNINGS PER WEEK AND YEAR OF PERSONS IN SUCH FAMILIES WHERE FATHER WAS NOT EMPLOYED.									Total earnings of all.
Number working.		Weeks employed.	Weekly earnings.	Yearly earnings.	Weeks employed.	Weekly earnings.	Yearly earnings.	Weeks employed.	Weekly earnings.	Yearly earnings.	
1	1	1 48	\$1 60	\$172 00							\$172 80
2	1	1 40	3 00	120 00	4	\$3 00	\$12 00				132 00
3	1	1 48	3 00	144 00	8	6 00	48 00				192 00
4	2	1 16	3 00	48 00	8	3 00	24 00				72 00
5	3	1 48	7 00	336 00	40	4 00	160 00	8	\$1 00	\$24 00	520 00
6	1	1 18	3 50	23 00							28 00
7	2	1 32	6 00	192 00	36	7 00	252 00				444 00
8	1	1 18	3 00	24 00							24 00
9	1	1 40	3 50	110 00							140 00
10	1	1 32	3 25	104 00							104 00
11	4	1 48	3 50	168 00	36	3 00	108 00	4	2 40	9 60	501 60
12	4	1 36	6 96	250 56	24	6 96	167 04	48	4 50	216 00	723 84
13	3	1 18	6 60	52 80	28	9 00	252 00	20	6 96	139 20	477 60
14	3	1 18	3 00	21 00	16	3 55	56 80	24	7 20	172 80	167 20
15	2	1 28	2 40	67 20	48	6 50	312 00	24	3 60	86 40	279 20
16	1	1 18	3 60	28 80							28 80
17	2	1 32	3 60	43 20	48	5 40	259 20				302 40
18	2	1 18	3 60	23 80	24	4 50	108 00				136 80
19	3	1 18	2 70	21 60	48	4 50	216 00	48	4 50	216 00	453 60
20	2	1 24	3 55	85 20	32	2 70	86 40				171 60
21	1	1 28	2 70	75 60							75 60
22	3	1 24	2 70	63 80	48	6 00	288 00	48	4 00	192 00	543 80
23	8	1 48	3 00	144 00	32	3 60	115 20	32	3 30	105 60	364 80
24	1	1 48	4 20	201 60	48	2 70	129 60				331 20
25	1	1 48	3 00	144 00							144 00
26	3	1 18	3 30	158 40	48	9 00	432 00	48	3 50	158 40	748 80
27	1	1 24	2 40	57 60							57 60
28	3	1 48	4 50	216 00	48	3 00	144 00	48	4 00	192 00	552 00
29	3	1 48	10 00	480 00	48	2 50	120 00	48	3 00	144 00	744 00
30	4	1 32	3 00	96 00	20	1 50	30 00	48	2 75	132 00	290 00
								16	2 00	32 00	
31	2	1 31	2 50	77 50	40	4 20	168 00				245 50
32	2	1 48	4 80	230 40	48	3 60	172 80				403 20
33	1	1 4	2 00	8 00							8 00
34	3	1 40	10 00	400 00	40	4 00	160 00	4	2 00	8 00	568 00
35	2	1 40	4 50	180 00	8	2 50	20 00				200 00
36	2	1 36	3 00	108 00	12	2 50	30 00				1 8 00
37	2	1 32	2 25	72 00	8	2 50	20 00				92 00
38	3	1 40	7 00	280 00	32	7 00	224 00	8	2 50	20 00	524 00
Total	8	1,175	\$153 21	\$5,071 86	880	\$124 71	\$4,115 04	500	\$35 97	\$2,015 04	\$11,201 94
Ave.	2 18	30.92	4.03	133.44	31.4	4.42	147.00	29.41	3.88	124.41	294.79

¹ Families each having one child under 14 years of age employed.

² Families each having two children under 14 years of age employed.

³ Families each having no children under 14 years of age employed.

The above table deals with families where the father was either dead or separated from the family. It is not as a whole quite as comprehensive as the foregoing tables. As to the earnings, however, it covers the ground fully. The table shows the time worked, the wages per week and earnings for the year of

each member of each family who had been employed; and also the total earnings for the year to each family.

As to the number employed there was considerable of a variation. For 10 families there was only one. For 14 there was two and three persons to each, respectively, and for three there was four persons to each employed. As space in the table was provided for three workers only for each family some doubling up was necessary. For the same reason there is empty space for families where less than three persons was employed.

In the 38 families 83 persons, or a trifle over 2.18 persons to each, were employed. As to time of employment the variation runs from 4 weeks to the full year, the average for all being 30.8 weeks. The rate of wages also varied greatly, the lowest being \$2.00 per week, the highest \$10, with the average for all at \$4.13 per week. This is an extremely low average and indicates the fact that the larger proportion of the workers were children, young persons and women.

With such variations in the number employed, the time employed, and the rate of wages it must also follow that there was much variation in the total earnings to the family. The average earning to each family was \$294.79 for the year. For 6 families the earnings was over \$500; for 4 it was \$400 but under \$500; for 4 it was \$300 but under \$400; for 3 it was \$200 but under \$300; for 10 it was \$100 but under \$200; and for 11 families the earnings for the year was under \$100 in each case. Considerable over one-half of 21 families thus received from earnings less than \$200 during the year. In some cases the earnings was only a few dollars. It is unnecessary to say that in such cases help was obtained from other sources. Their temptation to put their children to work must also have been strong. To do so in violation of the law, however, was not necessary as most could have secured permits free of charge upon application.

As to children employed it was found that 24 families had each one under fourteen years of age and that 6 families had each two children under this age at work, while for 8 families there was no child under age. For the 38 families there were thus 36 children found employed in violation of the law. This condition was made the basis for the following classification of the data:

*Classification of the data in the preceding table.**Families with one child under 14 years.*

Totals and averages.	Number of families.	Number working.	Weeks employed.	Weekly earnings.	Yearly earnings.	Weeks employed.	Weekly wages.	Yearly earnings.	Weeks employed.	Weekly wages.	Yearly earnings.	Total earnings.
Totals...	24	48	731	\$93.40	\$3,138.10	556	\$11.70	\$2,583.20	284	\$26.50	\$1,036.00	\$3,737.30
Averages...	1	2	30.45	3.89	131.75	34.75	4.48	161.45	35.5	3.31	129.50	261.55

Families with two children under 14 years.

Totals and averages.	Number of families.	Number working.	Weeks employed.	Weekly earnings.	Yearly earnings.	Weeks employed.	Weekly wages.	Yearly earnings.	Weeks employed.	Weekly wages.	Yearly earnings.	Total earnings.
Totals...	6	17	172	\$17.75	\$516.00	100	\$13.05	\$284.80	140	\$15.35	\$216.00	\$1,260.80
Averages...	1	2.8	28.66	2.95	86.00	16.66	4.67	44.8	28.00	3.07	95.20	210.13

Families with none under 14 years.

Totals and averages.	Number of families.	Number working.	Weeks employed.	Weekly earnings.	Yearly earnings.	Weeks employed.	Weekly wages.	Yearly earnings.	Weeks employed.	Weekly wages.	Yearly earnings.	Total earnings.
Totals...	8	18	272	\$42.96	\$1,417.76	234	\$35.96	\$1,263.04	76	\$24.12	\$503.01	\$3,183.84
Averages...	1	2.2	34	5.45	177.22	37.3	6.00	210.51	19.00	6.02	140.76	387.98

All families.

Totals and averages.	Number of families.	Number working.	Weeks employed.	Weekly earnings.	Yearly earnings.	Weeks employed.	Weekly wages.	Yearly earnings.	Weeks employed.	Weekly wages.	Yearly earnings.	Total earnings.
Totals...	38	83	1175	\$153.21	\$5,071.86	880	\$123.71	\$4,115.01	500	\$35.97	\$2,015.01	\$11,201.94
Averages...	1	2.18	30.92	4.0	133.47	31.4	4.92	117.00	29.41	3.88	124.41	294.78

In the above presentation the data for the 38 families have been presented with reference to the number of children employed. Thus we find under the first head the totals and averages for the 24 families for each of which one child under age was employed. Under the second head is found the total and averages for the 6 families for which in each case two children under age were found. Under the third in order are included the data for the 8 families having no children under fourteen employed and under the fourth is summarized the figures for all. In the following table the average earnings alone have been classified on the same basis.

Classification of earnings.

Classification.	No. of families.	No. working.	Average to each member.	Average to each member.	Average to each member.	Average total to each family.
Families with one child under 14 years	24	2	\$130 75	\$161 45	\$129 50	\$281 55
Families with two children under 14 years	6	2.53	86 00	44 90	95 20	210 13
Families with no children under 14 years	8	2.25	177 22	210 51	140 76	397 98
All families included	38	2.18	\$133 44	\$147 00	\$124 41	\$294 79

This presentation shows the average earnings to each worker for each class of families as well as for all. As seen above there were, to the 38 families, 83 workers, or 2.184 to each. The total amount received as wages by all was \$11,201.94. Divided equally among the families there was an average to each of \$294.79. Divided on the same basis among the workers there was an average of \$134.96 to each. The averages for each class of workers in the above table do not correspond to the average earnings for the family. The reason for this is that owing to a variation in the number for each class a smaller divisor was used for the second and third class in order that for the figures from which the average each family was obtained.

This carries the child labor investigation up to March, 1899, or up to the end of the period during which formal reports were made upon each child under sixteen years of age who was found employed. The investigation, however, was continued but was confined chiefly to children under 14 years of age. During March, April and May 108 children under this age were discovered and dismissed from work because of being illegally employed.

About June 1st the new so-called child labor and other factory laws enacted by the legislature during the preceding months, went into effect. As explained elsewhere these laws, among other things, provided for further restrictions in the employment of children. The most important and effective of these restrictions are those under which no child under 16 years may be employed without an affidavit as to his age, is provided

and kept on file by the employed. Additional inspectors were also provided for by the same legislature.

From early in June, 1899, to January, 1900, the work of enforcing the child labor law has been conducted on a much broader basis. This has been made possible through the affidavit system and because of additional inspectors. Before the new laws went into effect no record was kept of the children that would in any way help to reveal their identity. Now an affidavit as to age by parent or guardian must be kept on file by the employer for every child under 16 years of age. Before there was little restraint upon the parents. Now they are compelled to make oath as to age of child. Before there was only one-third as many inspectors as now. It is true that there are parents who swear falsely, but even in such cases the discovery of the truth is much easier because the other facts in the affidavit furnish a basis for the inspectors to work upon.

The last legislature therefore took a long step forward in legislation of this nature. The additional authority and working capacity with which it provided the bureau has also resulted in more effective work, while the work of the inspectors has been divided among the enforcement of all the factory laws due attention has been given to child labor. Their efforts have also borne good results. There is not a provision in the laws which is not more completely enforced than formerly. Between June 1st, 1899, and January, 1900, the inspectors personally took 526 children under the legal age out of the various kinds of employment and thus removed one of the obstacles to their school attendance.

But what has thus been done directly by the inspectors since the new child labor law went into effect is not all that has been accomplished through this law as will be explained later. Every employer was notified of the new law immediately upon its passage and besides this provided with a supply of blank forms for the affidavit required. This was followed up by an inspection. The result of all this was that each child already employed was given a blank affidavit with instructions to have the same filled out. As many of the children were under the legal age, and the larger proportion of the parents in such cases would not fill out the papers, this naturally meant that such children

failed to return to work. An effort was made to obtain some record of those who thus staid away; but while it was learned that a large proportion did not return no accurate data as to their number could be obtained directly through the observations of the inspectors. Some of the larger employers were asked to report upon it and from these reports it was found that in 155 establishments about 880 children failed to furnish affidavits.

The number of children who are thus known to have been affected by the work of the inspectors from January, 1898, to January, 1900, may thus be summarized as follows:

Periods.	Children.
January, 1898, to March, 1899	664
March, 1899, to June, 1899	108
June, 1899, to January, 1900, by inspectors directly.....	526
June, 1899, to January, 1900, by inspectors indirectly.....	880
Total in two years	2,178

The 880 in the last item are those who failed to return to work when an affidavit was required. While we have no data to show that all of these were under 14 years of age, the circumstances under which they staid away, however, point strongly to this fact. Detailed explanations of this item will be found in the following pages:

EMPLOYERS VIEW OF THE PRESENT LAW.

We have thus seen a few of the more serious features of the child labor problem as found under the factory system not only in its early stages but up to the present time. We have seen the condition as regards child labor in this state during a period covering the year which preceded the enactment of the present law upon the subject, and the first seven months during the operation of this law. About the relation of the employers to this question, however, little has directly been said. As the employers are greatly affected by laws restricting the employment of children and also appreciates the effect of such legislation more keenly than any other class, it was thought advisable to obtain their views in relation to this matter, especially upon the effect of the present law not only upon the number of children employed, but upon their business. To this end the following

letter was addressed to employers of children throughout the state.

GENTLEMEN :—

I am endeavoring to ascertain the effect and workings of the law regulating the employment of children, which went into effect last spring, and would like to have your views in relation to this matter and especially upon the following points:

1. Give the approximate number of children in your employ who failed to return to work when required to furnish affidavits as to their age.

2. Do you think this law has reduced the number of children under fourteen years of age employed in your line of business?

3. Do you think this law, as it stands and as enforced, is detrimental to business in your line?

4. What changes would you suggest, either in the law itself, or in the way in which it is enforced?

I desire very much to be right in this and other matters pertaining to my duties and am seeking information that may guide me to that end. Anything you may have to say in reply to all or any of the above questions, or in relation to this matter as a whole, would likely prove of great value to me and will be greatly appreciated.

Thanking you in advance, I am,

Very respectfully yours,

About 250 of these letters were sent out, and to 226, or 90.4 per cent. replies were received. Of these replies, however, 14 did not answer the questions in detail, or go further than to indorse, in general terms, legislation for the protection of children. The reason given for not touching directly upon the questions was that they were not employers of children and hence had no experience in the matter. Omitting those who took this position there remains 212 replies. And as there were complete, covering not only the points in question but many additional features of this problem, considerable space will be devoted to their presentation.

As the letter shows, it contains four questions. The first two of these relate to the immediate and permanent effect of the present law upon the number employed. Questions three and four bear upon the effect of this law upon their business and inquires as to what changes in the same might be desired.

The law restricting the employment of children which is in force now differs from the one which preceded it mainly in this that it requires affidavit as to age for all children under 16 years, limits the working day for those under this age to 10 hours daily, prohibits their employment between 9 o'clock p. m. and 6 o'clock a. m., and from operating elevators, besides in factories it also includes nearly all other kinds of employment. The age at which children may be employed remains the same as under the former law or at 14 years.

The affidavit as to age was provided in order to enable the inspectors to enforce this law. This is a most important provision. For fear of losing their job few children will admit that they are under the legal age limit regardless of the facts in the case. In this their side is also taken by all others concerned. Owing to their appearance it is also often impossible to tell just how old they are. Official records of the children are seldom to be found. A law restricting the employment of children which provides for no means of identification or by which the age of children may be verified is therefore practically ineffective. This is amply illustrated by the conditions in this state before the passage of the present law, and this is also the reason for the above provision under which no child under 16 years may be employed unless an affidavit as to their age by parent or guardian is kept on file by the employer.

The limiting of the working day to 10 hours, the prohibition of night work, and of operating elevators for children are also important provisions. It is generally agreed that as a rule children can not be kept to work beyond 10 hours daily, or at night without injury to themselves, or at the expense of their future. That a young child can not safely be entrusted with the operation of elevators is too plain for argument. If factory labor is dangerous to children it is plain that many other kinds of labor must be so. Hence the provisions of extending the law so as to embrace employment in other lines is also a step in the right direction. All these provisions are to the interest of the children and to society. That they do not unjustly discriminate against the employers and parents in this state is manifest from the fact that they have been adopted in practically every manufacturing state.

As said before the new law was passed in the spring of last year (1899). Upon its passage each employer was immediately notified of the same and supplied with a copy of the law. Besides this they were also supplied with blank affidavits. This was followed up by visits of the inspectors for the purpose of seeing to it that steps were taken to comply with the law. The result of this was that affidavits had to be furnished for children already employed or the children be dismissed, and that others could not be employed unless upon such affidavits. That the number of those already employed who failed to furnish affidavits, or thus to remain at work, was great is obvious from the numerous reports to this effect to the inspectors and from the enormously large number of applications for permits to work by children who had been let out of the factories and stores, etc., because they were under 14 years and thus could not furnish the affidavits. As we have the best of reasons for believing that a large proportion of those who thus failed to produce affidavits were under the legal age limit it would be of the greatest importance to know their number. To learn just how many illegally employed children were thus immediately relieved by the prompt enforcement of the new law is out of question; but it was thought that the approximate number could be obtained through the employers, and this is the purpose of the first question in the letter.

FIRST QUESTION IN ORDER.

This question read: "Give the approximate number of children in your employ who failed to return to work when required to furnish affidavits as to their age." The replies may be divided into three classes, those who gave the number of the children who failed to furnish affidavit and remain in their employ; those who said there were children in their employ who were let out, but could not give their number; and those who said that all their children furnished affidavits or returned to work. They are presented as follows:

		Number.	Per cent.
Classification of replies:			
Establishments reporting number	73	24.44	
Establishments estimating number	82	38.67	
Establishments where all returned to work.....	57	26.89	
Total	212	100.00	
Total persons employed:			
Establishments reporting number	11,820	39.25	
Establishments estimating number	12,460	41.38	
Establishments where all returned to work	5,830	19.37	
Total	30,110	100.00	
Number of children let out:			
Establishments reporting number	562	63.84	
Establishments estimating number	318	36.16	
Establishments where all returned .....	.....	.....
Total	880	100.00	

This table shows, that the 73 establishments reporting in full, as to the number of children in their employ who were affected by the new laws, employed in all 11,820 persons, and that 562 children failed to furnish the affidavit; that the 82 establishments reporting that their force was reduced, but could not say to what extent, employed in all 12,460 persons and that it was estimated that 318 children failed to return; that the 57 establishments reporting that none of their employers were affected by the law, employed 5,830 persons. From these figures it thus appears that 155 establishments or 73.10 per cent. employing 24,280 persons had their force reduced by 880 children while the remaining 57 establishments experience no such reduction as a result of this law.

The number of children who were thus affected seems very large. If all were under age, or illegally employed, the proportion of such labor was somewhat greater than even our past searching investigation revealed. In determining whether these 880 children were under 14 years of age there are many circumstances which must be taken into account and which really figure both ways. In the first place it was discovered that many of the children who failed to return to work staid away, not because they were too young, but because their parents preferred sending them back to school to signing an affidavit. Others again remained away for a short period only or until the papers could be prepared or the situation understood. On the other hand there

are facts **which** indicate that the figures here do not overstate the actual **condition**. It was said above that 82 of the establishments **would not** give the actual number affected. For these, the **number** was therefore estimated. In making these estimates **regard** was had not only to the past record of the establishments, **in** this respect, but to the contents of their reports and the **nature** of their business, and with this as a basis the figure is **conservative**. Such it also appears when the 82 establishments **in** this case are compared with the 73 establishments which **reported** in full. It will be noticed that the number for the latter **is** much greater than for the former, although in both cases the **conditions** were almost identical. Considering everything the above estimates must certainly be regarded as very conservative.

While these figures do not show the total number of children in the state who were affected by the new law, some idea of this may be had from the fact that the above establishments do not constitute one-half of the places in the state where children are employed.

SECOND QUESTION.

The next question in order read as follows: "Do you think the present law has reduced the number of children under fourteen years employed in your line of business." At first sight it might seem as if the answer to this question would be implied in those given to the one preceding it. This, however, is not quite true while both questions seemingly relate to the same matter the question of time is involved.

Thus the purpose of the first was to obtain some light upon the immediate effect of the law, while the second points more towards its probable permanent effect. Those who are familiar with all of the various means resorted to in order to keep children employed, readily see that the law might be temporarily very effective, but fail to remain so very long; that something might have turned up later that would enable evasions. It was hoped that the answers to the above question might reveal the situation in this respect.

Of the 212 establishments who answered this and the other

questions, only 27, or 12.74 per cent. stated that they did not think the law had materially reduced child labor in their line of business, while 185 said that it had greatly reduced the employment of children under fourteen years of age. The 27, or those who said the law had had no effect on child labor are, with 4 exceptions, among those who reported that all their children returned to work when required to furnish affidavits.

Of the fact that the new law materially reduced child labor in this state there can be no doubt. This is evident from the testimony of everybody interested, as well as from the experience of the inspectors. Both employers and parents are reporting to this effect. The inspectors are daily besieged for permits to work from parents of children under the legal age, who by misrepresenting their age had found employment before the passage of the law, but who now are unable to obtain it. It has also been felt in the increased attendance in certain schools. It is only through a vigorous enforcement, however, that the law will be lived up to. Realizing this the inspectors are visiting the places where children are employed as often as possible. At each visit the affidavits are checked up and doubtful cases investigated. The effect of this is obvious. It means that violations have been greatly reduced and that children, who before had no such chance, now may be sent to school.

THIRD QUESTION.

This question reads: "Do you think this law, as it stands and as enforced is detrimental to business in your line." Much has been heard about the serious effect upon business by prohibiting the employment of children. It has even been intimated that in some cases it would drive business out of the state. For these and other reasons it was thought that direct expression from the employers themselves would prove interesting and, perhaps, of great value, and to obtain such an expression was the main reason for this question.

Of the 212 establishments who reported 180, or 85 per cent., stated that the law was not detrimental, and 32, or 15 per cent., said it was against their best interests. In both cases some of the answers were somewhat qualified. The classification as

made, however, is as correct as it can be made without detailed description.

These answers very effectually disproves that the law in question is so very detrimental to the various business interests of this state. It is true that 15 per cent. claimed that the law, as a whole, was against their best interests. Comparatively speaking, however, this number is small. In most of these cases the reasons given were not particularly strong, or well taken. On the whole the objections raised against the law was more against some particular provision in it, than an attack upon it as a whole. The provisions mostly objected to is the prohibition of night work and the limiting of the working day to 10 hours for children under 16 years of age. It is easy to see how these provisions will affect those who yet stick to longer than a 10 hour working day. Admitting that the law pinches a little here and there, it can not be charged against it that it discriminates, in anyway against employers in this state, because practically every manufacturing state has adopted the same provisions.

FOURTH QUESTION.

The question was: "Can you suggest any changes either in the law itself or in the way it is enforced." This question is almost as closely connected with the third as the second was with the first. Comparing the answers to the third and fourth questions little or no relation can be discovered between them. To the third question the answers were rather one sided, to the fourth on the other hand they vary greatly. Suggestions of all kinds were offered. On the whole what was said under this head throws much more light upon the position of the employers with reference to the law and our work than could have been obtained in almost any other way. For this reason what was thus said has been classified and presented in the following table:

Changes in the law suggested by the employers.

Running number.	Classification of changes suggested.	No. of answers.	Percent-ages.
1	The present law is all right and should be strictly enforced	73	34.44
2	No employment but compulsory school attendance for all children who are under 14 years of age.....	47	22.17
3	For children under 16 years the working day should not exceed 10 hours nor should they be employed at night..	28	13.26
4	The age for employment should be raised to 15 years..	16	7.56
5	The age for employment should be lowered to 13 years	11	5.15
6	The age limit for employment should not apply during vacation of schools	9	4.26
7	Repeal the clause limiting the working day for children under 16 years to 10 hours.....	10	4.72
8	Repeal the clause under which no child under 16 years may operate elevators	7	3.27
9	Repeal the affidavit system	8	3.75
10	Repeal the whole law	3	1.42
	Aggregate	212	100.00

The preceding table embraces a classified statement of the various changes in the law desired or suggested by the employers: These changes are classified under 10 separate heads and the number of the establishments by which they were suggested, together with their percentage of the total are given in each case.

The first class in order is made up of those who either expressly or by implication favored the present law and desired it strictly enforced. As compared with the other classes this is by far the largest, including, as is seen, 73 establishments, or 34.44 per cent. of the total.

The second in order covers all establishments which expressly took the position that not only should all kinds of employment for wages of children under fourteen years be absolutely prohibited, but there should be compulsory school laws requiring children under this age to attend school. This class is also quite large constituting 22.17 per cent. of the whole, or 47 establishments. This fact is rather significant.

The third in size as well as in order is that which is made up of those whose opinion it was that no child or young person under sixteen years should be employed more than ten hours in any one day, nor at night. Many stated this in very emphatic terms, citing facts from their experience in support of their position. The number of establishments in this class is 28, or 13.26 per cent. of the total.

The fourth class includes all who suggested that the age limit for employment ought to be raised from fourteen to fifteen years. This class consists of 16 establishments, or 7.56 per cent. of the total reporting.

In the preceding four classes are included all who either favored the present law, or advocated still stronger protection for children and young persons. The establishments embraced under these heads number 164, or 77.43 per cent. This is nearly four-fifths of the total reporting. The fact that so large a proportion should take this position is very significant. It indicates among other things that the trend of opinion upon legislation of this nature is the same among the employers as among other classes, and that many view this matter from a point of view of their ultimate interest as a class.

The remaining six classes cover all who either disapproved of the law as a whole, or with some of the provisions in the same.

The fifth class consists of those who thought the age limit for employment should be lowered from fourteen to thirteen years. Their number, however, was comparatively small, being only eleven, or 5.15 per cent. of those reporting. The sixth class, covering 9 establishments, or 4.26 per cent., is made up of those who desired that the age limit for employment should not apply during the vacation of school. Those in the seventh and eighth classes, numbering 10 and 7 respectively, urged the repeal of the provision which limits the working day and prohibits the operation of elevators for children under sixteen years of age. The ninth class, consisting of 10, shows those who desired the affidavit system abolished, and in the tenth those are found who wanted the law as a whole repealed. This class, however, includes only 3 firms, or less than one and one-half per cent. of the whole.

The last six classes in the table, or those enumerated in the preceding paragraph, cover all those who were more or less opposed to the present law and consequently suggested such changes as would best fit their interest. Compared to those who favored the law as it stands, and those who desired it even stronger, this number is not very large. All told, the six classes embrace only 48 establishments or 22.57 per cent. of those reporting, as

against 164 establishments or 77.43 per cent. who took the opposite view. Nearly four-fifths thus favored progressive legislation along this line, while a little over one-fifth favored a course the very reverse of this. Those who favored the latter course were in practically every case large employers of labor or engaged in undertakings in which young children can be employed to advantage. This, however, was also the case with many of those who favored even greater restrictions than the present.

While the foregoing replies, as presented and analyzed, throw a great deal of light on the workings of the present law and upon its effect on the number of children employed, on business in different lines, and the position of the employers in general with reference to these matters, they do not reveal everything that was conveyed in the replies. This is particularly true so far as the last two questions are concerned. Concerning these two questions many employers replied at considerable length. Many matters were explained in detail. Some used explicit and even strong terms. Others again were mild, vague and evasive. That in an arbitrary classification, such as the above, it should be possible to convey their full meaning is not to be expected. In order to correct any wrong impression that might emanate from this shortcoming, and to make the real situation plainer, extended extracts from a few of the more complete replies are given in the following pages:

"While our work is such that we can employ children to advantage and that for this reason it would be to our immediate interest to do so, we recognize the fact that early employment is not likely to result in the best class of men and women. This problem, therefore, involves the welfare not only of the children themselves but of the state. It also seems to us that in the long run the interest of the employers lie in an efficient working class. For these reasons we would say that the law as it stands is a step in the right direction. Understand that similar laws have been enacted and are enforced in other manufacturing states. Since this is the case this law cannot justly be complained of here. We may, as employers, have a right to ask for as many privileges in this line as other states afford, but we certainly cannot, at the expense of society, demand any more than this.

Speaking from a purely business point of view we should be glad enough to employ children, particularly at certain kinds of work. From the standpoint of society, as a whole, we will say that a uniform law for all manufacturing states under which no child under fifteen could be employed and which compelled school attendance up to this age would be preferable to the present laws. If we are ever to reach the industrial supremacy predicted for us, it can only be because of a superior industrial class. Such a class can nowhere be had without the most careful bringing up. Many employers overlook this. Circumstances are also often such that they are forced to disregard ultimate for immediate interests. The state, however, cannot afford to be unmindful of future requirements of the growing race no matter what individuals may think. As a student of industrial problems I have often watched the effect of employment upon young children and thus speak from experience. Fourteen years ought to be the minimum age limit, and until eighteen no young person should be allowed to work more than ten hours in any one day. The school laws should be so amended as to be in full harmony with the factory laws."

"We are fully in accord with the spirit of a law that children under the age of 14 years should be kept in school as far as possible instead of in the factories. While it no doubt requires occasionally a considerable effort on the part of parents to deny themselves the advantage of the few dollars that may be earned by young children, in the long run, however, we are satisfied that it results in good particularly to the children, as they become better fitted to take up the struggles of life at a time when their parents are probably unable to work."

"We believe in the law and its strict enforcement, and further in a compulsory school system under which every child is kept in school until at least fourteen years of age. Our present school laws are simply a farce. We have often had boys of 16 and 18 years of age in our employ who claimed to have attended some of these parish schools until fourteen years of age, but who could not sign their own pay roll. Instances of this kind have been numerous enough for general comment among our office force. Now all schools ought to be brought up to the highest possible standard and the children compelled to

attend them. This it is clearly the business of the state to be on the lookout for."

"Think the law is all right, but the boys we have in our employ are boys whose parents are poor and who have been put to work young in order to help support the family, and they do not let the affidavit stop them. Most of these parents are also foreigners and care more for the almighty dollar than for giving their children even a fair education."

"Enforce the law to the letter. Children under fourteen should be in school. If the parents are too poor to keep them there, the town is both willing and able to do so. Children under sixteen should not work longer than ten hours in any one day, nor work nights or where greater responsibility or judgment is required. These statements are based on experience. I fully believe in, and have always advocated, state interference where parents, for any reason, neglect to give their children the right kind of bringing up. It is for such purposes we maintain the various institutions. The principles back of such interference are settled. Why then should they not be carried out?"

"The law should be strictly enforced as a whole, but there is one provision which is of particular importance and that is that no boy under sixteen should have charge of an elevator. At best and where all possible safeguards have been thrown around an elevator there still remains a danger, and it is a question whether, under any conditions, a boy under this age can run it safely. There are certain kinds of work such as operating on emery, polishing, grinding wheels, and sand stones which are particularly dangerous to the health, and which no minor should be permitted to do."

"We think the law is a good one and that it should be even more rigidly enforced than at present. We have always been particular in ascertaining the child's age before hiring it. Yet in spite of our efforts the combined testimony of both parents and children, to the effect that the child was fourteen or over has often gotten the best of our judgment and made us hire them even in doubtful cases. Thus it has often happened that against our will, we have had children under the legal age in our employ. The affidavit system, however, will to a great ex-

tent overcome this and is therefore a good thing. Since put into practice it must have been the means of nearly, if not quite, taking all children under fourteen out of factories and indirectly thus put them back to school. This, at least, was the case in our plant."

"While always morally opposed to child labor we have often employed children for longer or shorter periods, and owing to the fact that their ages have been misrepresented many of these have been under fourteen years. As the new law provides for a system of affidavits we hailed it with delight. In the past, when refusing to take a child pressed upon us by old and faithful employes, ill feeling has always resulted if we refused to take it. This we are naturally anxious to avoid. Under the new law the affidavit system protects us, to some extent, from such impositions, and hence, aside from its social importance, we are in favor of it."

"We certainly believe it has reduced the number under fourteen years of age employed in the state. While we have never, knowingly, employed any under this age yet when it came to having an affidavit from parents, etc., we found several that were under fourteen, who before claimed to be over this age. We have issued an iron-clad rule that we will not employ children under fourteen whether they have a permit or not. Looking at the question from all sides it certainly seems that this country can amply afford to give its children a proper bringing up. On the whole, the law is a blessing and must result in better men and women. Boys and girls under fourteen should not be permitted to become regular wage earners under any circumstances. If the people are poor the community should take care of the children and permit them to attend good schools until at least fourteen years of age."

"The law, if strictly and evenly enforced, is satisfactory to us. As to the affidavit system, however, while a great improvement upon the former, we have not found it an absolute bar against the practicing of frauds on the part of the employes. We have had it occur to us several times that a certain minor would come in with an affidavit which afterwards was found to have been made out for an entirely different party, but which evidently had been borrowed for the purpose of getting a job

in our factory. We find also that the impression prevails among the parents that when their children once have signed an affidavit they can use the same in going from factory to factory. It ought to be made plainly understood that a minor must furnish a new affidavit for each position and that this should be good for the factory in question only and in no sense transferable."

"The law is no doubt a step in the right direction, but in order to serve the purpose must be vigorously enforced. In practically every line of business there is a constant strife for something by which to gain a point or two over their competitors. That children should, in many cases, be put to work suitable only for older persons is therefore no surprise. To prevent such employment is necessary, or at least good policy for the state. My candid opinion is that each place in the state where children can be employed should be visited by an inspector at least once a month. This would put us all in the same position, and make it impossible for any one employer to take unfair advantage over the rest by being able to secure cheaper labor."

"Part of our work is beyond the physical capacity of children, other parts again require skilled hands. Our experience with children is therefore limited. So far as it goes, however, we can say that fourteen years is certainly not too low a limit for employment. Children under this age rarely possess the qualifications for anything but lightest and simplest duties and even in this they require a great deal of watching. In our factory complicated work for children has always meant a waste of material. Parents both inside and outside of our employ have often pressed us to take their little ones, and we confess that we have often yielded to this, but while doing so have nearly always felt that we were causing the child more harm than good. Even when the duties are light the hours are usually long, and in our opinion there is little or no relation between long hours of confining employment and such exercise as a child needs for growth and development."

"We do not know exactly how the law reads and exactly what it covers, but if it covers only children employed in factories we think it should be changed so as to cover those under four-

teen years of age employed in all kinds of business and should be rigidly enforced, for we see no reason why children should be allowed to be employed in stores under fourteen years of age and not be employed in factories. We think if they are allowed to be employed in one place at a certain age, they should be in another. What we have particular reference to is this: From our observation we should think there were a great many children employed in stores, and especially in the large stores, in the capacity of cash boys and cash girls, and delivering packages, that are under the age of fourteen years. Of course this is a thing that we are not positive about but simply from observation, and looking at some of the "kids" which we see employed in these stores. Now if the law does not cover cases of this kind, we surely think it should, for our idea is that the law was made for the purpose of forcing parents to send their children to school and thus give them an education, and we think the idea a very good one, and in the end we believe it is for the interest of the parents as well as the children themselves, for with the education which they will get they will be fitted to occupy better positions than they will be able to obtain without a reasonable amount of education."

"We believe the law is a good one, and if as rigidly enforced as it now seems to be will accomplish a great deal of good. In order to get the best result from it, however, there must be no letting up in constant watchfulness on the part of those whose duty it is to enforce it. Close and painstaking work on the part of the inspectors is absolutely necessary. A letting up in this for a few months only would be sufficient for children under the legal age to work their way back into the factories again. If we should suggest any change in the law it would be to raise the legal age from fourteen to fifteen years, and that it should cover all kinds of employment for wages."

"From our experience in the matter we can say that few children under fourteen years can be steadily employed for ten or twelve hours a day without permanent physical injury and loss of necessary schooling. As the law has undoubtedly reduced the number of such children it has accomplished some good. The law ought to be made still stronger. Neither boys or girls under sixteen years should be permitted to work in bowling

alleys, most kinds of restaurants, or places of amusement. Work in such places leads among other things to late hours, which above almost anything else is injurious to a child. Public parks and halls where intoxicants are sold are also bad places for children to be employed in. More children in one way or another have been disqualified for a successful race in life through early employment in such places than appear on the surface of things."

"In a general way, any law or rule we could adopt that will tend to promote the welfare of our employes, inside or outside the shop, is as distinctly an advantage to the corporation from a money-making standpoint as to society from a social point of view. Our aim is to raise the general tone of our workers and to this end welcomes all suggestions that may be of value and will gladly comply with any reasonable law that may be enacted."

"Have always done our best to prevent the employment in our plant of children coming within the law. In spite of this we have sometimes been imposed upon by parents who claimed their children were past fourteen years. Our factory is clean, with plenty of air, the work is light and varied, permitting conversation, the use of seats and moving about. To young persons we regard it much preferable to stores and similar places where the work is always the same and confined to a small place and where they are on their feet all the time."

"We certainly believe that school and not the factory is the place for every child under fourteen, and that the future of the country largely depends upon the kind of voters and workers we are raising today. We have often heard manufacturers say that but for child labor they could not hold their own. While we believe that this is actually true in some cases it has always occurred to us that a business which depends upon such labor had better close down, not only for its own good but for that of the community. The causes for the downward trend in such cases is, as a rule, not high priced labor, but bad location, superseded machinery, or most likely bad management. They are usually the marginal producers who merely hang on for the time being. Of course, there is a given limit in the wage scale about which wages must gravitate and above which few em-

employers can afford to go. But in over 30 years of active business experience it has been my observation that the business which shaves down wages until a little below everybody else, either look in the wrong direction for their profits or rest upon a shaky foundation. What such businesses usually need is a new manager. We often employ a large number of children and we do this for economic reasons. There is no denying the fact that a child of fifteen is in some occupations as useful as a grown person, while it can be had at a much lower wage. The number of such occupations, however, is limited in practically every plant. Children under fourteen, however, we have always tried to keep out, though we must say that we have often been deceived as to their age."

The preceding fifteen letters are only extracts. No reply is printed in full. In making the extracts, however, care was taken to preserve the language of the writer. There was, of course, necessarily some departure from this, but in no instance was the meaning altered in the least.

In reading these extracts it will be observed that all indorse the present law or legislation in this direction. As many of the writers were engaged in industries where children may be advantageously employed, and also extensive employers of such labor, what they have said is of the greatest significance and deserves close attention. Throughout the whole special stress is laid upon the necessity of a stronger law for compulsory education than the one we have at present. Over time and night work is also dwelt upon by many and considered very injurious to children. The following eight letters represent those who held opposite views:

"We believe that the law affecting the employment of children is defective, especially where it applies to the manufacturing institutions outside of the large cities, where the manufacturing conditions are better and more favorable than those in the city, which we presume that this law was framed to meet. We believe that the law, as it now stands, should affect the employment of children only during public school terms and should not apply during vacations for the reason that we find, in this city, that it is much better that the children be employed than to be permitted to run on the street. This has been called

to our attention by displacing of children that were found to be under age upon investigation. Many of the parents and guardians representing these children have told us that it gave them great pain to have them denied employment in our factory. They said that until they had secured employment in our factory for their children that they had suffered great anxiety for the whereabouts of their children, and that after employment was given they knew where they were and that they were under good care and learning habits of industry, and that after being discharged they were thrown upon the street and into the companionship of vicious and bad boys that had no inclination or desire to work. The public schools are now advocating manual training. What better practice can boys have that have been started in this direction by the public school than employment in well regulated factories such as are found in this city. It certainly is much better for the boys than to be turned loose on the street during vacation, especially such boys as are at all disposed to be vicious. What we have said about this is from a disinterested standpoint as it is not a matter that as manufacturers affects us in the least. What we have said is for the good of the children and in behalf of the guardian or parent, as the matter has been presented to us in the enforcement of the law in this city."

"The new child labor law is a detriment to us in two ways, first, by prohibiting children under sixteen years from working more than ten hours in any one day, and second, by providing that no child under this age shall be permitted to operate elevators. We usually operate our plant more than ten hours daily. During the busy season we work over twelve hours. As we employ a great many children at work that necessarily such as to come in close connection with that of the older hands, the letting out of the little ones at the end of the ten-hour run usually means the closing down of the whole plant. This cannot help but result in both a great deal of inconvenience and loss. We can see no reason why children should not be permitted to work under the same conditions as older people, particularly if their parents consent to this. Previous to this law any child in the shop that was at liberty could step up and run the elevator. Now this is out of the question and we had to

employ a boy over sixteen especially for this purpose. This means an additional expense to us. For these and other reasons we desire this law repealed."

"Suppose the law is all right from a social standpoint, but would like to see the age at which children may be employed reduced from fourteen to thirteen years."

"For business reasons we would like to see the law so amended as to permit children to work over time, at least at certain periods during the year, for instance, when business is brisk, as usually is the case before July fourth and Christmas."

"Our business is heaviest during summer and it would be an advantage to us if children under fourteen could be employed during school vacations."

"As our busiest season is in the fall it would be to our interest if children over fourteen would be permitted to work over time for at least three months during the later part of the year."

(It is generally admitted that children cannot without injury be put to work until fourteen years of age. There may be exceptions to this but such exceptions are likely to be so few and of such a nature that they cannot, safely, be met by legal provisions. The trouble with the factory as a place of training is, that hours are too long and that the work cannot be suited to the capacity of the child. Once in a factory the child is also likely to stay there. The main idea expressed in above letter is undoubtedly good; the trouble comes in the application.)

"Have no suggestions to make, but it seems to us that most of the children we had to lay off last spring are now likely to be in the streets, and this is much worse for a child's future than to be regularly employed in factory. We have many examples right here in our own city where early street life has led to a criminal career."

(This is unfortunately true. But the remedy is not found in letting such children into the factories, but in such laws and truancy service as will keep the children in school. A child who is taken out of school and put to work at the age of twelve is certainly to be pitied. Once out of school it is out for good. Everything seems to operate against its being sent back even if deprived of work.)

"In regard to the law regulating the employment of children

we wish to say first of all that the persons who made and advocated it certainly did not know what they were doing, as it is the most ridiculous law that was ever put upon the statutes. The writer has been employing children for over twenty-five years, and never found a child yet who came to our factory twelve years old in good health who was injured in any way by any work we gave him. Many parents cannot keep their children in school after they are fourteen years of age, and to say that no child under sixteen shall work in a factory where they have occasional over-time in the busy season is to say that when the dull season comes they shall work less than full time. Our factory now is running less than eight hours per day because of your law. We have no objection to the law as it was, relating to boys going to work under fourteen but when applied beyond that point, it simply shows that those who made it did not understand the conditions as they are. We do not like over time, but there are certain periods of our busy season when it is absolutely necessary in order to get out work to run a few hours overtime and the little we would do this would never harm the boy. We did not wish to be lawbreakers last fall and therefore ran ten hours and are suffering for it now, so that in saying the parties who made the law did not understand the conditions we are far within the truth."

The eight preceding letters embrace practically all objections which have been brought against the present regulations of the employment of children. Of the 212 letters received only 11 were in this strain. There were a few who thought minor changes might result to their advantage without at the same time injuring the children, but the main purpose of the law was generally indorsed. The 11 letters mentioned of which the above two letters are a fair sample, attack either the law as a whole, or the most important provisions in the law. It is true that no law, for the regulation of labor, that is of any real benefit to society as a whole, never was, nor ever can be enacted, that did not in some way interfere with the actions or course of some individual operator. This fact is implied in the law itself. The very purpose of such laws is to put a stop to such practices in the industrial world that are found to be injurious to society. Society is merely protecting itself. The writers of these letters are

quite extensive employers of children and besides this their plants are located in places where the average working time is somewhat above the average.

It is therefore only natural they should feel the effect of this law. Looking at the matter from their standpoint only their position might appear just. It is very likely that the law operates against their immediate interests by slightly lowering their profits for the time being. On the other hand society is interested in a strong race and in intelligent voters, and all past experience goes to show that to this end it must care for its children. It is true that there are single cases where early and unrestricted employment does not seem to have worked harm. But such cases are rather exceptional. Again and again it has been fully demonstrated that early and unrestricted employment is a permanent drawback to the best class of men and women. Nowhere has it been found safe to leave children to the mercy of industrial forces alone. As practically every manufacturing state in the country has adopted and are enforcing the same or similar provisions, no claim of unjust discrimination can be set up from this source.

The matter under this head thus consists of a presentation and analysis of the replies of 212 employers to four questions concerning the effect of the present law restricting the employment of children. The questions with their answers may be summarized as follows:

The first question relates to the immediate effect of the law as a whole upon the number of children employed. Of the 212 who answered this 155, or 73.11 per cent., stated that it decreased child labor in their establishments, while 57, or 26.89 per cent., said that they noticed no such decrease. The immediate decrease from all causes in the above 155 establishments is reported as 880 children.

The second question bears upon whether the decrease in child labor was permanent and reply to this 185 the decrease in such labor in their line of business permanent, while 27, or 12.74 per cent., had noticed no particular change in this respect.

The third question is concerned with the effect of the law upon the business. To this 180, or 85 per cent., stated that they did not regard the law as particularly detrimental and 32, or 15 per cent., looked upon it as injurious to their interests.

In the fourth question the employers are asked what changes they would suggest in the law. To this 164, or 77.43 per cent., expressed themselves either as satisfied with the law, or gave it as their opinion that it ought to be extended still further, while 48, or 22.57 per cent., regarding the same as too sweeping desiring all, or several of the provisions, which they looked upon as detrimental, repealed.

Besides this, extracts from 23 letters are printed. Of these, fifteen upholds the present law as well as legislation along this line. The necessity for compulsory schooling for all children under 14 years, and the danger to children from long work days and from night work is particularly emphasized. In the remaining eight letters the opposite view is taken. By most of these child labor is regarded as necessary to their business. They generally hold that 14 years is too high an age limit for employment, that children under 16 years should not only be permitted to work more than 10 hours daily as well as at night, but to run elevators, in fact that their employment should be unrestricted. On the whole these letters convey very clearly the sentiment among employers towards legislation of this nature.

SCHOOL ATTENDANCE.

In the foregoing letters from employers the necessity of longer school attendance for the children is strongly pointed out. The remarks thus included represent only a small part of what was said in this matter. The views given are of the greatest value. Being entirely voluntary on their part the inference is warranted that the views expressed were uppermost in their minds. Bearing in mind that they are interested parties in such matters and have a great deal of experience with children and young persons their position is certainly significant.

The trend of the opinions thus given by the employers seems to be that all children should be made to attend school during the full school terms until they are fourteen years of age, or until old enough to be employed under the present laws which regulates such employments. Among the reasons advanced for these views one in particular deserves attention. This is, that many children need a better education than they get at present, in order to make the most of life in industrial as well as all

other respects. This is in accord with the best thought of today. But coming from this source it would seem to have increased weight.

As school attendance is regulated by law, or supposed to be so regulated, it was thought proper in this connection to present a synopsis of the present laws in this state relating to compulsory attendance, and the following copy from statutes of 1898 prepared:

ATTENDANCE AT SCHOOL.

SECTION 439a. Any person having under his control any child between the ages of seven (7) and thirteen (13) years shall cause such child to attend some public or private school for at least twelve weeks in each year; except in the following cases:

(1) When such child is being otherwise instructed in the elementary branches of learning for a like period.

(2) When such child's mental or physical condition is such that attendance at school is inexpedient or impracticable.

(3) When such child lives more than two (2) miles from any school, by the nearest travelled road.

(4) When any court of record shall excuse such child from attendance at school.

Any person who violates any provision of this section shall forfeit not less than three (3) nor more than twenty (20) dollars.

SECTION 439b. DUTY OF OFFICERS.—It shall be the duty of the director or president of the board of education, or truant officer appointed by the board, to sue for any forfeiture under the preceding section, and for his failure so to do within fifteen days after written notice has been served upon him by a taxpayer or elector, he shall be liable for not less than ten (10) nor more than twenty (20) dollars.

SECTION 439c. TRUANT OFFICERS.—Board of education or district board may appoint one or more truant officers, whose duty it shall be, to apprehend upon view all children between seven (7) and thirteen (13) years of age who habitually loiter around public places, and place such children, when so apprehended, in such school as shall be designated by the parents or persons having control of such children.

Officers shall report all cases of truancy to their boards. Such officers shall be paid out of the school funds, their salaries being fixed by the board appointing them.

SECTION 439d. USE OF FORFEITURE.—All forfeitures collected shall be paid to the proper treasurer, and shall be accounted for as school funds.

SECTION 439e. CENSUS OFFICER'S DUTY.—It shall be the census officer's duty to ascertain the number of children between the ages of seven (7) and thirteen (13) who are not attending school, and as far as possible the cause of such non-attendance.

The above provisions are included in sections 439a, 439b, 439c, 439d, and 439e of the statutes of 1898. They constitute practically all there is in the way of legislation in this state that may be said to have any direct bearing upon enforced school attendance.

Section 439a provides shortly, that, with certain exceptions, all children between the ages of seven and thirteen years shall attend some public or private school for at least twelve weeks each year. These are perhaps the most important provisions.

Upon the points covered by these provisions the employers held, as a rule, that all children should be compelled to attend some good public or private school during the greater part of each year until at least fourteen years of age.

In thus comparing the provisions in the present law in this respect with the position of the employers we find the employers far in advance of the law. Thus the law compels attendance until thirteen years of age. The employers desired this raised at least one year or up to fourteen years. The law provides for some schooling and a yearly attendance of twelve weeks. The employers again advocated good schools and a longer yearly attendance.

Section 439c relates to the appointment as well as the duties of truancy officers. It will be noted that under it truancy officers "may" be appointed. This was evidently regarded as a weak point and that it ought to read "shall" appoint. At least, many gave it as their opinion that the school board in all manufacturing localities should be compelled to appoint and provide for an efficient truancy service. Several called attention to the fact that there were many such places without any truancy service whatever.

The position of the employers is certainly noteworthy. The propositions to extend the school age one year, or until fourteen years of age and to provide a better truancy service in manufacturing centers merits serious consideration from the coming legislature. Enacted into laws they would bring the school laws into full harmony with the so-called factory laws as these stand at present.

THE CHILD LABOR LAW AND THE STATE AS PARENS PATRIAE.

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In early history the question as to how far the state, if at all, could interfere with the rights of the parent in determining the status of the child was an important one.

The power that the state has to-day to protect and promote by adequate legislation the health, morals and welfare of its children has been gained by a very slow process of evolution. When family tribes and private law existed in ancient times, the father was considered the omnipotent factor. He controlled the family. His voice was the law. He was judge as to whether his child was doomed to die or live; and it was not infrequent that he would sell, kill or give away his children. The laws and customs of Greece and Rome recognized in him that supremacy which existed for many years.

The little child had no rights whatever. He grew up as a servant and slave of the family, only to be released at the death of the father, when he would then take his place and govern his children in the same manner he was governed. The evils which resulted from this custom cannot all be told. Murder and crime predominated.

When city government came into existence and the family as a political institution ceased, many powerful rights of the father were taken away. Yet the right to govern his children remained. Nations sprung up and we still find the father adhering to the old time custom. Once in a great while, for the prevention of cruelty and preservation of health, public necessity would interfere with the punishments as were inflicted by the father; but such was so very unusual that a change could hardly be noticed by such interference.

In England, until within the last century, the child had no rights whatever. Blackstone regarded him as an individual

without a distinctive legal status. Throughout the commentaries the child is merely considered as an incidental phenomenon, and his moral welfare is ignored. He is treated somewhat under the head of Parent and Child, regarding him purely as a paternal right, completely ignoring his welfare and emphasizing only the absolute ownership of the father.

The child was no more than a chattel to be kept or given away according to the wish of the father. So absolute was the paternal possession that even in late years he could give or bequeath away his child's custody despite its mother, though it were an infant in arms, or even before birth. The mother could say nothing concerning the welfare of her children. She had no claim whatever except for due reverence and respect. The laws were silent and they were so until the beginning of this last century. It was by a slow process that the state came forward, taking from the cruel hands of the father the infant and placing him in the atmosphere of liberty and equality.

In our country, though the customs and traits were brought along from abroad, yet our policy in general was far more favorable. Our courts early recognized that certain parental rights ought to exist and be protected; but for the public benefit and welfare, the child was made primarily the ward of the state.

Story says "To recognize in the father any absolute right to the control of his child would be to deny that 'all men are born free and equal.'"

The pleadings of the infant came to the ears of the courts early enough so that our records in national history do not stand soiled, as some do in foreign lands, with the blood of a helpless little cripple who had been worked or whipped to death. Although our system was by no means complete, yet we can boast of those early laws which were passed for his protection and welfare and which the courts eagerly upheld and enforced.

In the case of *Bennett vs. Bennett*, 13 N. J. Eq., the court says: "The argument (that the act is unconstitutional) proceeds upon the assumption that the parent has the same right of property in the child that he has in his horse or that the master has in his slave, and that the transfer of the custody of the child from the father to the mother is an invasion of the father's right

of property. The father has no such right. He has no property whatever in his children. The law imposes upon him for the good of society and for the welfare of the child certain specified duties. By the laws of nature and of society he owes the child protection, maintenance and education. In return for the discharge of those duties, and to aid in their performance, the law confers on the father a qualified right to the services of the child. But of what value as a matter of property are the services of a child under seven years of age? But whatever may be their value, the domestic relations and the relative rights of the parent and child are all under the control and regulation of municipal laws. They may and must declare how far the rights and control of the parent shall extend over the child, how they shall be exercised, and where they shall terminate. They have determined at what age the right of the parent to the services of the child shall cease and what shall be an emancipation from his control." This view is also substantiated in *People vs. Weisenbach*, 60 N. Y., 385; and *State vs. Clothe*, 33 Ind., 409.

Story in 2 Story Eq., Sec. 1341, further says: "although in general, parents are intrusted with the custody of the persons and the education of their children, yet this is done upon the natural presumption that the children will be properly cared for and will be brought up with a due education in literature, morals and religion and that they will be treated with kindness and affection. But whenever this presumption is removed, whenever, for example, it is found that a father is guilty of gross ill treatment or cruelty toward his infant children, or that he is in constant habits of drunkenness or blasphemy, or that he possesses atheistical or irreligious principles or that his domestic associations are such as to tend to the corruption and contamination of his children, or that he otherwise acts in a manner injurious to the morals or interests of his children, in every such case the courts or equity will interfere and deprive him of his children and appoint a suitable person to act as guardian and to take care of them and superintend their education."

In New York in the matter of *Donahue et al.* where the question came before the court on a statute which prohibited children of a certain age to enter the circus ring, *Westbrook, J.*, in

speaking for the court says: "The right of the state to care for its children has always and with very great propriety been exercised. Under its laws whenever the welfare of the child has demanded, its courts have frequently interfered for the protection of children of tender years. It has again and again taken them from one parent and given them to the other, or has refused so to do, the good and welfare of the child being the object always in view. It has so acted without the intervention of a jury and that power has never been supposed to have been improperly exercised because a jury was not allowed and due process of law not had. If the courts of the state may, by virtue of their general powers, interfere for the protection and care of the children, it is not seen why the legislature may not prescribe the cases in which children should be rescued from their custodians and a mode provided for their summary disposition. For example, if children should be placed to learn the business of stealing, could not the legislature provide a summary remedy for the evil? Has the law no power to rescue, summarily, female children held for the purposes of prostitution, or interfere in an expeditious manner in very many cases where children of tender years are exposed to peril or temptation? This will hardly be argued, or, if claimed, authority most abundant can be found to justify it. In my judgment it is a most wise, salutary, and beneficent statute, born of christian civilization and founded upon the teaching of Him to whom children were objects of tender love and care. It needs no evidence to demonstrate to our judgment that the life to which these children were subjected and from which they were rescued was perilous to their best interests. It was dangerous to them physically and morally. The contortions, evolutions, and performances of the acrobat are clearly, physically dangerous, and the surroundings and the companions of the circus ring are equally so morally."

The legislatures of the different states have passed many laws which are for the direct benefit and interest of its children, and volumes could be written on them. Even the child labor laws, if to be considered in both England and this country, may fill the pages of a great book.

I wish to give briefly a historical synopsis of these laws and the important decisions of the courts. Perhaps no law which is

found on our statute books is as important as the Child Labor law. It was passed for the welfare of the little child who was forced to work with his tender little hands so that the parents could be satisfied in receiving his small earnings, and the manufacturer with cheap labor. They little knew the effect, and the evils it would bring. It was the outcome of ignorance and vice.

In taking up this law, we must look to England and see the wonderful results in a century of factory legislation. She has furnished us by her parliamentary reports, complete and authentic information as to the conditions of child labor during that period. In 1769 when Mr. Arkwright obtained his first patent for a machine for spinning cotton yarn, the movement for the employment of children started. As other numerous inventions were made, the demand for children increased and the little home which was filled with the noise of happy little children was soon silenced.

Under the stimulus of the war in that time manufacturies multiplied wonderfully. Women and children were almost driven to the shops of burdensome toil. Thorol Rogers says: "I am convinced that at no period of English history, for which authentic records exist was the condition of manual labor worse than it was in the years from 1782 to 1821, the period in which manufacturies and merchants accumulated their fortunes from the small and nimble fingers of little children and women."

Thousands of little infants could be seen working about in factories in the most pitiful and alarming condition. - Mr. Walker, political economist, says on page 381: "The beginning of that century found children of five and even three years of age in England, working in factories and brick yards; women working under ground in mines, harnessed with mules to carts, drawing heavy loads; found the hours of labor whatever the avarice of individual mill owners might exact, were it thirteen, fourteen or fifteen; found no guards about machinery to protect life and limb; found the air of the factory fouler than language can describe, even could human ears bear to hear the story."

In 1816, through the efforts of Sir Robert Peel, a committee was appointed to investigate the factories. The work was not fully carried out, but out of 23,000 factory hands employed,

14,000 were found under eighteen years, and in Scotland, out of forty-one mills inspected, 4,404 were under ten. In a return from Manchester, out of a total of 12,940, 793 were under ten and 5,460 between ten and eighteen. Even with this report no legislation could be obtained because it was met with the bitterest opposition from the manufacturers and even from the political economists. The argument advanced by the manufacturers was, that it would mean financial ruin. Parliament would rather see the capitalist pile up the glittering pieces of gold than to extend a helping hand to a pleading infant who was dying of work and disease in the bondage of slavery.

What could have been more touching than to see these little dwarfs down in the depths of earth, harnessed to carts, crawling on their tender hands and knees, dragging and pulling to the surface loads of coal. What a sad state of affairs! Although the laws of England seemed to extend to the protection of most everything else, yet she turned her ears and would not listen to the cry of the little helpless.

Mr. Wm. F. Willoughby, in his Child Labor report, says: "Children of all ages, down to three and four, were found in the hardest and most painful labor, while babies of six were commonly found in large numbers in many factories. Labor from twelve to thirteen and often sixteen hours a day was the rule. Children had not a moment free, save to snatch a hasty meal or sleep as best they could. From earliest youth they worked to a point of extreme exhaustion, without open air exercise or any enjoyment whatever, but grew up, if they survived at all, weak, bloodless, miserable, and in many cases deformed cripples and victims of almost every disease. Drunkenness, debauchery and filth could not but be the result. Their condition was but the veriest slavery and the condition of the serf or negro stood out in bright contrast to theirs. The mortality was excessive, and the dread diseases, rickets and scrofula, passed by but few in their path. It was among this class that the horrors of hereditary disease had its chief hold, aided as it was by the repetition and accumulation of the same causes as first planted its seeds."

"It seemed as if the young child was doomed to live his young life out, as if condemned to torture for some heinous crime." In 1802, out of 4,000 infants who entered the factories, only

600 passed the age of thirty years. Can we but wonder why this great Lord Robert Peel would stand in Parliament year after year advocating a measure which would restore the pale babe to its home of care and comfort; and yet Parliament was very slow to act because of the strong protest made by the manufacturer; but in 1819, after a bitter contest, she passed an act forbidding the employment of children under nine years and restricting the hours of daily labor to twelve to those between the ages of 9 and 16.

A few minor laws were passed before this, yet they were never enforced. So we might say that the act of 1819 marked the beginning of the English Factory laws. In 1831, night work was forbidden to all, under the age of twenty-one, and eleven hours a day was made the limit for those under eighteen years of age. In 1833, Lord Ashley presented a bill which was passed providing that the employment of children under nine years be forbidden. (2) That the hours of labor for those between nine and thirteen be limited to eight hours a day. (3) That the hours of labor for those under eighteen engaged in worsted hemp, tow and linen spinning should not exceed twelve hours a day and forbidding night work. (4) That school attendance was required and inspectors appointed to enforce the same. In 1835, another law was passed forbidding the employment of children under ten years in mines. A report was also submitted which showed that out of 170,000 employees in the cotton mills, 70,000 were below eighteen years of age. This led to the passage of another law which restricted the hours of labor of children to five hours for all those between the ages of thirteen and eighteen. A board of inspectors was also appointed to enforce these laws.

Each year found a new law which added to the protection of child labor. In 1878, (Vol. XIII, 41-42 Vict.) parliament passed an act which nearly wiped out all the evils which predominated so firmly for a whole century. The provisions of that act are in substance as follows: "Those under the age of ten shall not be employed at all, and those between the ages of ten and fourteen shall be employed only half time, either in the forenoon or afternoon, or on alternate days. (2) The hours of employment for young persons (fourteen to eighteen) shall be

from six to six or seven to seven, of which two hours shall be devoted to meals and on Saturdays all work shall cease for them at 1:30. (3) Adequate sanitary provisions are provided. (4) Also ample provisions against accidents. (5) A suitable number of inspectors and assistants are created to insure the due execution of the law. (6) Medical certificates of fitness for employment must be furnished by all under sixteen. (7) Weekly certificates must be obtained from the proper authorities by the employees showing the required amount of school attendance for every child in their employ.

The above law with a few amendments passed in 1892 (55-56 Vict.) and 1895 (58-59 Vict.) makes the English system stand out a model for governments to follow. She has the most complete and efficient factory system of any nation on earth. It has taken her just one century to remedy all those evils which nestled in with her inventions and expansion of factories. No law stands forth brighter on the rolls of parliament. No law has done more for the infant and working classes than those under the factory system of England.

Today the little child is not to be found in the dusty rooms of the factories, nor in the cold, dark pits of the mines; but in its stead his shining face is found gleaming forth with happiness and intelligence in the schoolroom. It has been seen that the child labor laws were of slow growth and development. One restriction after another was placed upon the manufacturer until the child was brought back to the road which leads to purer manhood, where he can go on and some day resume the responsibilities of a citizen.

Many of these laws have been contested and brought to the courts for construction; but the courts by their decisions stood ready to enforce every word of the act.

In the case of *Bardon vs. Parrott*, 40 L. J. M. C., 200; 19 W. R., 1144: "A child under eight years was sent to a working shop to be taught to make straw plait and to read. The child was kept in a room making straw plait under the owner or occupier of the workshop's superintendent. The straw was provided by the child's mother, and the plait was taken home to her, and she sold it. She paid the occupier 3d a week, but he had no interest in the proceeds of the sale of the work." The

court held "That the law must be strictly complied with, the taking of the boy and putting him to work was such employment as would come under the statute." 30-31 Vict. 146 S. S. 6 and 7.

Taylor vs. Hickes, 31 L. J. M. C., 242; 6 L. T., 784: "A child under thirteen was employed in a room in a building within the precincts of which there was a quantity of machinery moved by steam and devoted to the manufacture of an article composed of wool and cotton mixed, but the child was not employed in any respect upon or in attendance to the machinery, nor was there any machinery in the room in which he was employed in pricking pieces of leather with an awl to fit them for adaptation to form parts of the thing manufactured in the building. Held, "The manufacturer liable under the statute which must be strictly complied with."

Plaurers Ship & Iron Co. vs. Clayton, 10 B. E., 177; 19 L. T., 638: "A company carried on works which formed one trade establishment, comprising the business of blast furnaces, iron rolling mills, engine building and iron ship building in all its branches. The whole of the several branches communicated and were open from one end to the other and were confined within one common boundary. Steam machinery was used for the purposes of the company and in each department more than fifty persons were employed. A child under eleven was employed as a rivet boy, and in the department where he worked, steam machinery was in use for cutting and shaping iron plates, and rivets were heated. Both plates and rivets were used in the building of iron ships. Held, "That the department in which the child was employed was a factory and the employer is guilty of violating the statute."

Hardcastle vs. Jones, 3 B. & S., 153; 7 L. T., 322: "A child employed in finishing goods in a shed in which finishing alone is carried on, but which communicates internally with other buildings in which printing is carried on, is employed in a print works within 8 & 9 Vict., 2932, whether the particular finishing is incidental to the process of printing or not, and a surgeon's certificate of his health is therefore necessary under S. 20."

I cite here other cases bearing on this question: *Cameron vs. Toy*, 30 L. T., 517; *Haydon vs. Taylor*, 9 L. T., 382; *Hoyle vs.*

Crayne, 12 C. B., (N. E.) 124; Kent vs. Osthy, 10 B. S., 802; Whymper vs. Harney, 18 B. S., (N. E.) 243.

In this connection a few cases regarding dangerous machinery and fencing might be given.

The case of Bertwistle vs. Hindle, 76 L. T., 159: "The provision in sec. 5, sub. sec. 3 of the Factory and Workshop act of 1878 (as amended by sec. 6, sub. 2 of the Factory and Workshop act of 1891) that—all dangerous parts of the machinery in a factory shall be securely fenced—applied to all machinery from which, in the ordinary course of working it, danger may reasonably be anticipated although such danger may arise by reason only of careless working or of any external causes.

Bedgrave vs. Loyd, 72 L. T., 565.

The English factory law, no doubt, has had a great influence in shaping legislation in the different states of our country. Though we labor under a disadvantage as compared with England, in that the destiny of the child labor law depends on the various legislatures of the different states; yet our states were not slow in placing upon their statute books the law which protects the infant. As early as 1842 the question was brought up in Connecticut and reasonable restrictions were passed upon the manufacturer.

From 1842 to the present, inventions and manufacturing industries made a wonderful progress and with it came the evil of child labor. Massachusetts was one of the first of states to pass a code of laws regulating the employment of children in manufacturing establishments. The law was passed in 1866 and is as follows:

"Sec. 1. No child under the age of ten years shall be employed in any manufacturing establishment within this commonwealth, and no child between the age of ten and fourteen shall be so employed, unless he has attended some public or private school under teachers approved by the school committee of the place in which such school is kept, at least six months during the year next preceding such employment, nor shall such employment continue unless such child shall attend school at least six months in each and every year.

Sec. 2. The owner, agent or superintendent of any manufacturing establishment who knowingly employs a child in violation of the preceding section, shall forfeit a sum not exceeding fifty dollars for each offense.

Sec. 3. No child under the age of fourteen years shall be employed in any manufacturing establishment within this commonwealth more than eight hours a day.

Sec. 4. Any parent or guardian who allows or consents to the employment of a child, in violation of the first section of this act shall forfeit a sum not exceeding fifty dollars for each offense."

Many of the states soon followed Massachusetts. As the manufacturing expanded so did the child labor law, until to-day nearly every state in the union has enacted them. Wisconsin stands foremost with her system and thanks to the Labor Commissioner who was instrumental in bringing about the passage of these laws.

The following is the law of Wisconsin relating to child labor:

Section 1. No child under fourteen years of age shall be employed at any time in any factory or workshop or in or about any mine. No such child shall be employed in any mercantile establishment, laundry or in the telegraph, telephone or public messenger service, except during the vacation of the public schools in the town, district or city where such child is employed.

Section 2. It shall be the duty of every person, firm or corporation, agent or manager of any firm or corporation employing minors in any mercantile establishment, store, office, laundry, manufacturing establishment, factory or workshop or in the telegraph, telephone or public messenger service within this state to keep a register in said mercantile establishment, store, office, laundry, manufacturing establishment, factory or workshop in which said minors shall be employed or permitted or suffered to work, in which register shall be recorded the name, age, date of birth, place of residence of every child employed or permitted or suffered to work therein under the age of sixteen years and it shall be unlawful for any person, firm or corporation, agent or manager of any firm or corporation to hire or employ or to permit or suffer to work in any mercantile establishment, store, office, laundry, manufacturing establishment, factory or workshop, telegraph, telephone or public messenger service any child under the age of sixteen years unless there is first provided and placed on file in such mercantile establishment, store, office, laundry, manufacturing establishment, factory or workshop an affidavit made by the parent stating the name, date and place of birth and name and place of the school attended of such child. If such child have no parent or guardian, then such affidavit shall be made by the child, and the register and affidavits herein provided for shall, on demand, be produced and shown for inspection to the factory inspector, assistant factory inspectors or any officer of the bureau of labor and industrial statistics.

Section 3. No person under the age of sixteen years shall be employed, required, permitted or suffered to work for wages at any gainful occupation longer than ten hours in any one day, nor more than six days in any one week, nor after the hour of nine at night nor before the hour of six in the morning.

Section 4. It shall be the duty of the commissioner of labor, the factory or assistant factory inspectors to enforce the provisions of this act, and to prosecute violations of the same before any court of competent jurisdiction in this state. It shall be the duty of the said commissioner of labor or the factory or assistant factory inspectors, and they are hereby authorized and empowered to visit and inspect, at all reasonable times, and as often as possible, all places covered by this act.

Section 5. The commissioner of labor, the factory or assistant factory inspectors shall have the power to demand a certificate of physical fitness, from some regularly licensed physician, in the case of children who may seem physically unable to perform the labor at which they may be employed, and no minor shall be employed who cannot obtain such a certificate.

Section 6. Whenever it appears upon due examination that the labor of any minor over twelve years of age, who would be debarred from employment under the provisions of section one of this act is necessary for the support of the family to which said child belongs or for its own support, the county judge of the county where said child resides, the commissioner of labor or any factory or assistant factory inspector may in the exercise of their discretion issue, free of charge, a permit or excuse authorizing the employment of such minor within such time or times as they may fix.

Section 7. No firm, person or corporation shall employ or permit any child under sixteen years of age to have the care, custody, management or operation of any elevator.

Section 8. The words "manufacturing establishment," "factory" or "workshop" as used in this act, shall be construed to mean any place where goods or products are manufactured or repaired, dyed, cleaned or sorted, stored or packed, in whole or in part, for sale or for wages, and not for the personal use of the maker or his family or her family or employer.

Section 9. Any person, firm or corporation, agent or manager of any corporation who, whether for himself or for such firm or corporation or by himself or through agents, servants or foremen, shall violate or fail to comply with any of the provisions of this act or shall hinder or delay the commissioner of labor, the factory or assistant factory inspectors or any or either of them in the performance of their duty or refuse to admit or shut or lock them out from any place required to be inspected by this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not less than ten dollars nor more than

one hundred dollars for each offense. Any corporation which, by its agents, officers or servants, shall violate or fail to comply with any of the provisions of this act shall be liable to the above penalties, which may be recovered against such corporations in an action for debt or assumpsit brought before any court of competent jurisdiction in this state.

Section 10. Any parent or guardian who suffers or permits a child to be employed or suffered or permitted to work in violation of this act shall be guilty of a misdemeanor and upon conviction thereof, shall be fined not less than five nor more than twenty-five dollars.

Section 11. All acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

Section 12. This act shall take effect and be in force, on and after its passage and publication.

Approved April 27, 1899.

EMPLOYMENT OF CHILDREN.

Section 4587a. Any person having the care, custody, control of any child under the age of fourteen years who shall exhibit, use or employ, or in any manner or under any pretense sell, apprentice, give away, let out or otherwise dispose of such child to any person for any obscene, indecent or immoral purpose, exhibition or practice, or for any business, exhibition or vocation injurious to the health or dangerous to the life or limb of such child, or who shall cause, procure, or encourage any such child to engage therein, or any person shall take, receive, hire, employ, use, exhibit or have in custody any such child for any such purpose shall be punished by imprisonment in the county jail not exceeding six months or by a fine of not more than one hundred dollars, or by both imprisonment and fine.

The weeping, helpless little infant is now liberated, to grow up to nobler manhood as the son of the state. Not only has the legislature looked after his welfare and interest, but the court likewise has always stood as his protector.

There are very few adjudicated decisions on the subject of child labor as the justice of these enactments seems to be everywhere conceded; yet the principles which substantiate these laws have been upheld in many other cases. In the case of *People vs. Ewer*, 141 N. J., 127, the court ably discusses the right of the state over infants. The matter grew out of the arrest of Charlotte Ewer on the charge of violating a statute which read as follows: "A person * * * who exhibits * * * a female child apparently or actually under the age of sixteen

years * * * or who having the care, etc., of such child as parent, etc., in any way consents to the employment or exhibition of such child either as * * * a dancer * * * or in a theatrical exhibition dangerous or injurious to the life, health or morals of the child * * * is guilty of a misdemeanor."

The court in sustaining the validity of the statute says on page 132 of its decision: "The assumption of the exercise of this extraordinary and very necessary power (police power) has been the subject of severe criticism in the opinions of judges when it has been sought thereby to regulate the control and interest of the public, the conduct of corporate or individual business transactions. *Munn vs. Illinois* (94 U. S. 113), may be referred to as starting a current of authority in this country. But no criticism can find just grounds for caviling at legislation, whose ends clearly tend to promote the health or moral welfare of the members of society. To that class of legislation this statute belongs. By preventing the exhibition of children of tender and immature age upon the theatrical, or other public stage the legislature is exercising that right of supervision and control over the child, which in every civilized state, inheres in the government, and which nothing in the legal relations of parent and child should be deemed to forbid. The proposition is indisputable that the custody of the child by the parent is within legislative regulation. The parent by natural law is entitled to the custody and care of the child, as its natural guardian, and is held to the performance of certain duties. To a society organized as a state, it is a matter of paramount interest that the child should be cared for and the duties and support of education be performed by the parent or guardian in order that the child shall become a healthful and useful member of society. It is well remarked that the better organized and trained the race, the better it is prepared for holding its own. Hence it is that laws are enacted looking to the compulsory education by parents of their children, and to their punishment for cruel treatment, and which limit and regulate the employment in the factory and the workshop, to prevent injury from excessive labor. It is not, and cannot be disputed that the interest which the state has in the physical, moral, intellectual well being of its

members, warrants the implication and the exercise of every just power which will result in preparing the child in future life to support itself, to serve the state and in all the relations and duties of adult life, to perform well and capably its part."

Miles Merrett vs. Chatterton, 13 R. L., 299. The court says: "No action lies to recover a minor's wages earned in violation of St. R. S. Ch. 155 which prohibit the employment of certain minors in manufacturing establishments."

The father in this case tried to recover the wages earned by his son. The son was eleven years old and had worked five years in defendant's factory. The court held against the father and now the son brings the action. The court says: "No minor, etc., shall be employed," which means not only that no manufacturer shall employ any minor, but also what it says that no minor shall be employed, the employment itself being interdicted. The plaintiff is therefore suing for compensation for having violated the statute, for having done a forbidden thing. The law will not help a man when he does what the law says shall not be done."

Evans vs. Am. Iron & Tube Co., 42 Fed. Rep., 519: "Under the Ohio statute making it a crime to employ in a factory a child under twelve years, it is only necessary to prove, in a prosecution for its violation, the employment and defendant's knowledge of the child's age."

In the 141 N. Y. 129, the court also says: "The right of personal liberty is not infringed upon, because the law inposes limitations or restraints upon the exercise of the faculties with which the child may be more or less exceptionally endowed. The inalienable right of the child or adult to pursue a trade is indisputable, but it must be not only one that is lawful, but which, as a child of mature years, the state, for sovereign, as *parens patriae* recognizes as proper and safe."

Parker & Worthington on Public Health and Safety, Sec. 260 give the following:

"The state may forbid certain classes of persons from being employed in occupations which their age, sex, health, etc., renders unsuitable for them, as women and young children are sometimes forbidden from being employed in mines and certain kinds of factories, and statutes are perfectly valid which pro-

vide that women or minors shall not be employed in laboring by any person in any manufacturing establishment, more than a certain number of hours in any one day. Of such laws it has been said that they do not violate any constitutional rights. They do not prohibit any person from working as many hours a day as he chooses. They merely provide that in an employment which the legislature deems to some extent detrimental to health, no person shall be engaged above more than the prescribed number of hours per day. There can be no doubt that such legislation may be sustained as proper health regulation."

Mr. Cooley in his work on constitutional limitations, page 745, after reviewing the subject of laws interfering with the liberty of contract says:

"But here, as elsewhere, it is proper to recognize distinctions that exist in the nature of things, and under some circumstances to prohibit employments to some one class, while leaving them open to others. Some employments, for example, may be admissible for males and improper for females and regulations recognizing the impropriety, and forbidding women to engage in them would be open to no reasonable objection; the same is true of all children, whose employment in factories and mines is commonly regulated."

Other cases which might be referred to are *Lyman vs. Ill.*, 65 Ill. App., 678; *State vs. Hartfield*, 24 Wis., 60; *People vs. Ewer*, 19 N. Y. S., 933; *Burnett vs. State*, 17 S. E., 858; *Fielding vs. La Grange*, 73 N. W., 1308; *People vs. Meade*, 10 N. Y. S., 943.

One of the principal objects of the founders of the child labor law was that the child should be taken from the factory and placed in the school, and we have a compulsory law to that effect which is as follows:

Section 439a. Any person having under his control any child between the ages of seven and thirteen years shall cause such child to attend some public or private school for at least twelve weeks in each school year; provided, that this section shall not apply to any child who is being otherwise instructed in the elementary branches of learning for a like period, who has already acquired such knowledge, or whose mental or physical condition is such as to render his attendance at school and application to study inexpedient or impracticable, or

who lives more than two miles from any school by the nearest travelled road, or who is excused for sufficient reasons by any court of record. Any person who shall violate the provisions of this section shall forfeit not less than three dollars nor more than twenty dollars for each offense.

Section 439b. It shall be the duty of the director or the president of any board of education, or any truant officer appointed by such board of education, to sue for any forfeiture under the preceding section, and any such officer neglecting so to do within fifteen days after a written notice has been served upon him by any qualified elector or tax payer within the district, village or city within which the offending person shall reside shall himself be liable to a forfeiture of not less than two or more than twenty dollars for each offense.

Section 439c. The board of education or the district board may appoint one or more truant officers, whose duty it shall be, acting discreetly, to apprehend upon view all children between seven and thirteen years of age who habitually frequent or loiter about public places and have no lawful occupation, and place such children when so apprehended, in such schools as the parent or other person having the control of such children may designate. And such officers shall report all cases of truancy to their respective boards within a reasonable time. Such truant officers shall be entitled to such compensation, to be paid out of the school fund, as shall be fixed by the boards appointing them.

Many parents, for the sake of a few dollars, have evaded this law and have forced their children into the factories. It is hoped that in the near future this evil will be completely remedied and every child given a proper education.

In England when the factory laws were passed, an act known as the elementary school law was also passed which provided that each child was to attend school at least one-half of each day during the school year. This law is strictly enforced and no child grows to manhood without a reasonable amount of education. In *Manley vs. Scott*, 1 Sec. R., 112, the court says: "It is for the benefit of the realm that the laws pertaining to education of the children must be enforced."

The courts there are very firm in construing the elementary school law. They look upon it with great favor and anxiously seek the enforcement thereof.

In the case of *School Board for London vs. Jackson*, 7 L. R., 502, and 15 Q. B. D., 415, where the mother disobeyed the or-

der of the school board in sending her child, the court said: "It was intended by the education act that the children of England should be educated and it was intended to improve the responsibility of sending them to school upon definite persons where those definite persons exist. Primarily the person on whom it reposes that responsibility is the parent. I am of the opinion that the great object being that the children should be educated, parents are the first persons on whom the order should be made, and they must comply with the same."

See, further, *London School Board vs. Wood*, 54 L. J. M. C., 145; 15 Q. B. D., 415; *House vs. Brunett*, 45 J. P., 54; *Saunders vs. Richardson*, 50 L. J. M. C., 137; 7 Q. B. D., 388.

We can say of this country that we have a school system equal to any system of any government in the world. Our schools are free to all and the children can take advantage of the grandest opportunities. The constitution and statutes have made ample provisions for the public schools and yet it is astonishing to see hundreds of little children grow up in dense ignorance. It was therefore necessary in nearly all the states that compulsory education laws should be passed in order that the child might grow to adult age, capable at least to discharge the natural duties of a citizen.

John Eaton says: "Experience has shown that the attendance upon the free public school has never included all the children of school age. Parents have been found so indulgent and negligent of duty in that respect, so regardless of the interests of their children, as to suffer them to grow up in ignorance and idleness, or so greedy for a little present gain that they are willing to sacrifice the future welfare of their children to obtain it, and especially in our large cities, a class of children are found who prefer the unbridled license of the streets to the wholesome restraints of the school room. To remedy this evil I know of no better provision than the law of compulsory education."

The supreme court of Vermont in *College vs. Chandler*, 2 Vt., 683, says: "A good common school education at least is now recognized as one of the necessities for an infant. Without it he would lack an acquisition which would be common among his associates and would ever be liable to suffer in his

transaction of business. Such an education is moreover essential to the intelligent discharge of civil, political and religious duties."

In *Commonwealth vs. The Inhabitants of Dedham*, 16 Mass., 141, we find an indictment sustained against the people of the town of Dedham, Mass., for neglecting to keep and support a grammar school. The law was upheld in every respect.

In the case of *Ohio vs. Quigley* the supreme court in 1892 sustained the compulsory education law of Ohio. No opinion was filed, simply an order. This case was warmly contested in all the courts of Ohio. The law was one in all intents and purposes similar to the famous Bennett law of this state. It was upheld in every respect.

There is no question but that the supreme courts of every state would uphold and enforce the compulsory education law. The principles on which it is founded and which would be involved in an action are brought out in many cases already cited.

The question as to whether the legislature can restrict the hours of labor also comes up in the child labor law. In the case of *Commonwealth vs. Hamilton Mfg. Co.*, 120 Mass., 383, a statute provided that, "No minor under the age of eighteen years, and no woman over that age, shall be employed in laboring by any person, firm or corporation, in any manufacturing establishment in this commonwealth, more than ten hours in any one day." The court said, "It does not forbid any person, firm or corporation from employing as many persons or as much labor as such person, firm or corporation may desire, nor does it forbid any person to work as many hours a day or week as he chooses; it merely provides that in any employment which the legislature has evidently deemed to some extent dangerous to health, no person shall be engaged in labor more than ten hours a day or sixty hours a week. There can be no doubt that such legislation can be maintained, either as a health or police regulation, if it were necessary to resort to either of those sources for power. The principle has been so frequently recognized in this commonwealth that reference to the decisions is unnecessary."

In the case of *Holden vs. Hardy*, 169 U. S., 366, the court said: "A statute limiting the period of employment of work-

men in underground mines, or in the smelting, reduction or refining of ores or metals, to eight hours per day and making its violation a misdemeanor is a valid exercise of the police power of the state."

Other cases: *Bellingsley vs. Board of Commissioners of Marshall Co.*, 49 Pacific Rep., 329; *Coleman vs. U. S.*, 81 Federal Rep., 824; *U. S. vs. Mattin*, 94 U S., 404.

A statute can be declared void as in violation of the constitution only where the violation is clear and plain. *Lane vs. Doe*, 3 Sacm., 238; *Wolff vs. Aldrich*, 124 Ill., 591; *Hamilton vs. Ill.*, 109 Ill., 302.

Presumption is in favor of constitutionality of statute. *Roby vs. Sheppard*, 26 S. E., 278; *Burns vs. Ill.*, 45 Ill., 397; *State vs. Thompson*, 46 S. W., 191; *U. S. vs. Bernardin*, 10 App. D. C., 294.

We have seen the little child in early history and have watched him slowly grow to the heart of the state. Today he is not the slave of the factory, nor the victim of ignorance or vice. He is now reared in the arms of care. He is found in the school house and is on his way to sturdy manhood.

The state as *parens patriæ* will forever protect his rights and promote his welfare.

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PART IV.

MANUFACTURERS' RETURNS.

MANUFACTURERS' RETURNS.

The data under this head relates to manufacturing in this state. The figures were obtained directly from the manufacturers themselves, and cover the business for the two years 1897 and 1898 of 1,245 identical establishments in 46 different industries. The purpose of the investigation is to present a few facts which bear most closely upon the condition of the manufacturing industries during the period covered.

As seen in part two of this report, every report issued by this bureau contain statistics relating in some way to manufacturers. Thus the first biennial report, that for 1883-84, includes figures relating to the capital invested, the value of the product and of the stock or material intering into the same, the amount paid as wages, the number of persons employed, classified as to sex, and the average yearly earnings to each worker. The facts thus presented cover the business for one year only.

The second and third biennial reports, those for 1885-86 and 1887-88, respectively, give by establishments and industries, for the years covered, the number of persons employed, classified as to sex, the total amount paid as wages, the average yearly earnings to each worker, as well as many other facts concerning hours of labor, mode or time of payment of wages, and other conditions of employment. The data for each report cover one year only, concerning capital and product nothing is shown in these two reports.

In the fourth, fifth and sixth reports, covering in order the three biennial periods 1889-90, 1891-2, and 1893-4, the returns from manufacturers were mostly confined to classified daily wages, the amount paid as wages and average yearly earnings to each worker. Concerning capital invested, or used, the value of the product and the cost of the stock or material used, no in-

formation was obtained. As to classified daily wages, however, the returns were uniform, being compiled upon the same basis as well as obtained upon identical schedules. Although each of these reports contain the figures for one year only, annual returns were collected by the bureau. These facts are of the greatest importance. Statistics are of the greatest value when they admit of safe, or reliable comparisons. Uniform wage returns, such as were collected annually during the six years covered by the reports in question, may thus be compared and the course of wages during the period ascertained.

For the seventh biennial report, 1895-96, the returns obtained were, as a whole, much more comprehensive than those for any preceding period. As far as wages are concerned, however, no change of importance was made. The presentations in this respect are therefore in full accord with the previous work. In other respects there is a vast difference. Up to that time little effort had been made to obtain facts relating to the business as a whole. With the exception of those for the first report the inquiries had been limited to wages and a few other facts bearing upon the conditions of employment. The inquiries for 1895, on the other hand, covered in detail the capital invested or used, the value of the goods turned out, and, in detail, the expenses of production. The presentations thus made possible were far reaching, and carried out far enough to show the net earnings for each industry. This plan, however, involved a great deal of labor for a successful completion; more, in fact, than the bureau was equipped to meet. It was also somewhat more elaborate than was necessary to serve the purpose, while it constituted the beginning of a more comprehensive system of manufacturing statistics for this state, the original, or above plan was, for the reasons given, considerably modified for the succeeding report.

The presentation of manufacturing statistics in the form as modified was first made in the eight biennial report, that for 1897-98. The plan is simply this: Annual returns covering the business and employment of the leading establishments in the various industries are obtained. These returns are classified as to industries. Those covering the same establishments for the last full year and the year preceding the last are thus compiled,

or used, and presented in such manner that any increase or decrease in the volume of business and elements employed in production may be readily ascertained. Having thus included returns from the same, or identical establishments only it is obvious that the variations in the results as between the two years, must of necessity indicate the ups and downs in the business in each of the various industries represented as well as of all industries.

It is of course plain that the value of statistics of this kind depends largely upon whether they are of such a nature that comparisons can be made from one year or period to another. To this end, however, two requisites are necessary in this case. The returns for each year or period must cover either all the establishments or manufacturing institutions within a given area, or it must be confined to identical establishments. As to the first of these methods it is certainly the most satisfactory. In fact, it is the only absolutely complete way in which to measure the growth of any industry. Its province, however, falls within the national census. For a bureau of this kind a complete census each year is too big an undertaking. A complete census of all manufacturers involves so large an expenditure of money and efforts that it is doubted whether it would be wise to enter upon it oftener than every ten years. To thus measure the industrial growth from year to year through anything like an annual census is therefore at present not to be thought of.

In all manufacturing states it is of the greatest importance to learn something about the condition in these industries at shorter intervals than every ten years. Of most undertakings annual reviews are not only desired, but had, both from a private and public point of view. This is everywhere apparent. At the end of the year each individual business is subjected to closer overhauling. At such times trade and other journals make elaborate reviews of each industry as a whole. Official and other bureaus have been established for such purposes and are engaged in such duties. Local, state and national governments, as such, are also interested in industrial conditions, and this for the reason that conditions are largely affected by systems of taxation and other policies. Government, official and

legislatures are therefore constantly in search for anything that bears directly or indirectly upon the industrial welfare of the people. Efforts to supply such information would therefore seem eminently proper to a bureau of this kind. This is especially true if this work can be brought into harmony with that for which it was directly established.

Since such information is desirable and within the proper province of the bureau, the question is one of how to do it. A complete annual census is out of the question. What then can take its place? On the theory that what is true of the larger proportion of a certain class is also likely to be true of the whole class, efforts have been made to measure industrial conditions from year to year from annual returns of identical establishments. This method has been severely criticized and perhaps not entirely without reason. The results obtained under it cannot be absolute and must consequently be used with discretion. As to the criticisms advanced, however, they do not seem to warrant the discontinuing of this work where once established and where it can be properly carried on. There can be little doubt that uniform data of the business of the leading establishments in the various industries will, when properly used, throw a great deal of light upon the condition of all. Especially is this so when supplemented by other facts bearing upon conditions and full attention is given to those who enter and leave the industry during the period.

In 1896 this bureau began the collection and presentation of data upon this plan and has continued to do so for each year since. The facts for that year were compared with those of the year following or for 1897 and the results appear to truthfully represent the conditions for these years and were therefore regarded satisfactory. The presentations are found in the eight biennial report, that for 1897-98. The establishments included for these two years cover fully 66 per cent. of productive capacity in their respective industries and for the manufacturing industries in the state as a whole.

This brings this work down to the present, or the ninth biennial report. In this, as in the preceding report, the returns were obtained from identical establishments and cover their

business for the two years 1897 and 1898. In form the presentations here are the same as those in the last report. Between the various industries as well as for all the differences in the figures for the two years are plainly shown. As the same establishments are included for both years the differences indicate for the establishments in question, the absolute increase or decrease in the volume of their business, and, as the greater proportion of the productive capacity for the state is included, the differences also indicate the condition and trend of business for all manufacturing establishments in the state. An increase in the latter year means an increase of business for the state, while a decrease in the latter year means a decrease for the state. The returns were carefully edited, compiled, and compared and the results can be depended upon.

The data collected, and upon which the presentations here are based, relates to private firms and corporations, the amount of capital invested or used, the total value of the products, the cost of the stock and supplies entering into this product, the respective amount paid as wages and salaries, the number of persons employed by the day, hour, or piece, the number of persons employed by months, the classified weekly wages, the proportion of business as compared with the full capacity and the number of days in operation.

PRIVATE FIRMS AND CORPORATIONS: PARTNERS AND STOCKHOLDERS:
BY INDUSTRIES.

TABLE I.—1897.

In the following table, the number of private firms and corporations in each industry, together with the number of partners and stockholders by sex, is given:

INDUSTRIES.	Number of establishments.	NUMBER OF PARTNERS.			Number of corporations.	NUMBER OF STOCKHOLDERS.			As partners and stockholders.
		Male.	Female.	Total.		Male.	Female.	Total.	
Agricultural implements.....	31	8	19	19	23	201	35	236	255
Artisans' tools and hardware specialties....	10	8	15	15	2	7	...	7	22
Bicycles, tricycles, etc.....	7	2	3	3	5	98	1	29	32
Boots and shoes.....	24	9	15	15	15	151	17	168	183
Boxes (wooden and paper).....	20	17	37	14	51	12	45	8	53
Brick, tile and sewer pipe.....	23	14	38	38	9	64	20	86	124
Brooms, brushes and baskets.....	19	11	21	21	5	39	6	45	66
Burial cases, caskets, coffins, etc.....	4	2	8	8	2	18	...	18	25
Cement, lime, plaster, etc. ¹	12	3	4	4	8	201	33	234	238
Chairs.....	13	1	1	2	12	167	30	197	199
Cigars, snuff and tobacco.....	54	51	65	65	3	17	...	17	82
Clothing.....	23	15	64	22	86	10	52	25	77
Confectionery, crackers, etc. ²	12	2	3	3	7	25	3	28	31
Cooking and heating apparatus.....	27	15	30	1	31	9	83	4	87
Cooperage.....	21	12	14	14	9	116	3	119	133
Cotton and linen goods.....	5	2	4	4	3	169	23	192	196
Electrical and gas apparatus and supplies.....	21	8	15	15	13	118	15	133	148
Flour and feed.....	86	55	112	5	117	31	405	72	477
Food preparations.....	31	17	53	1	54	14	62	5	67
Furniture.....	42	11	19	19	79	31	418	32	451
Furs, gloves and mittens.....	11	8	16	2	18	3	12	...	12
Iron goods (malleable). ³	25	7	14	14	17	148	5	153	167
Knit goods.....	15	6	12	1	13	9	60	10	70
Lager beer.....	71	40	57	3	60	31	397	49	446
Leather.....	33	19	79	79	14	160	284	174	1823
Lumber, lath and shingles ⁴	168	66	101	2	105	101	548	94	632
Malt.....	20	6	11	14	14	123	11	134	148
Machines and machinery ⁵	86	45	73	1	74	39	227	27	254
Office and saloon fixtures, etc.....	15	9	23	23	5	312	5	317	344
Paints, oils and crude chemicals.....	7	2	4	4	5	18	1	19	23
Paper and pulp ⁶	34	3	3	3	28	156	18	174	177
Printers' supplies.....	4	...	...	...	4	17	1	18	18
Saddlery, harness, etc.....	9	5	8	8	4	17	2	19	27
Sash, doors, blinds, etc.....	73	43	91	91	30	163	18	181	272
Sheet metal goods.....	26	19	34	34	7	46	7	53	87
Ship and boat building ⁷	6	2	3	3	3	31	7	38	41
Soap, lye, potash, etc.....	9	6	9	2	11	3	39	3	42
Staves and heading.....	21	12	26	26	9	50	1	51	77
Stone (granite, marble, etc.).....	10	7	11	1	12	3	23	...	23
Straw goods.....	5	1	1	1	4	25	2	27	28
Toys and games.....	5	1	2	2	4	42	1	43	45
Trunks, valises, etc.....	9	2	4	4	7	58	9	67	71
Veneer.....	9	2	2	2	7	47	4	51	53
Wagons, carriages and sleighs.....	53	36	112	4	116	17	250	38	288
Woodenware.....	11	6	10	10	5	25	4	29	39
Woolen and worsted goods.....	17	5	7	3	10	12	87	23	110
All industries.....	1245	625	1262	63	1325	608	6769	947	7716

¹One establishment no partners or stockholders reported.²Three establishments no partners or stockholders reported.³One establishment no partners or stockholders reported.⁴One establishment no partners or stockholders reported.⁵Two establishments no partners or stockholders reported.⁶Three establishments no partners or stockholders reported.⁷One establishment no partners or stockholders reported.

PRIVATE FIRMS AND CORPORATIONS: PARTNERS AND STOCKHOLDERS:
BY INDUSTRIES.

TABLE II.—1898.

In the following table, the number of private firms and corporations in each industry, together with the number of partners and stockholders by sex, is given.

INDUSTRIES.	Number of establishments.	Number of private firms.	NUMBER OF PARTNERS.			Number of corporations.	NUMBER OF STOCKHOLDERS.			Ag. partners and stockholders.
			Male.	Female.	Total.		Male.	Female.	Total.	
Agricultural implements.....	31	7	17	....	17	24	200	41	241	253
Artisans' tools and hardware specialties.....	10	9	14	....	14	1	3	....	3	17
Bicycles, tricycles, etc.....	7	4	5	....	5	3	20	2	22	27
Boots and shoes.....	24	9	13	....	13	15	107	38	145	156
Boxes (wooden and paper).....	29	16	25	1	26	13	54	8	62	88
Brick, tile and sewer pipe.....	23	12	17	....	17	11	74	16	90	107
Brooms, brushes and baskets.....	19	14	20	....	20	5	45	7	52	72
Burial cases, caskets, coffins, etc.....	4	2	8	....	8	2	13	6	19	27
Cement, lime, plaster, etc.....	12	4	1	5	8	294	69	363	398	....
Chairs.....	13	2	35	3	38	11	124	22	146	184
Cigars, snuff and tobacco.....	54	51	66	1	67	3	17	....	17	84
Clothing.....	25	12	27	1	28	13	87	47	134	162
Confectioneries, crackers, etc. ¹	12	2	3	....	3	7	46	6	52	55
Cooking and heating apparatus ²	24	14	28	2	30	9	81	6	87	117
Cooperage.....	21	13	15	....	15	8	99	3	102	117
Cotton and linen goods.....	5	2	4	....	4	3	133	52	185	189
Electrical and gas apparatus and supplies.....	21	8	14	....	14	13	111	19	130	144
Flour and feed ³	86	55	82	3	85	30	417	79	496	581
Food preparations ⁴	31	14	27	2	29	16	87	5	92	121
Furniture.....	42	10	15	....	15	32	411	32	443	458
Furs, gloves and mittens.....	11	8	17	....	17	3	13	....	13	30
Iron goods (malleable) ⁵	23	5	6	2	8	18	151	16	167	175
Knit goods.....	15	3	4	....	4	12	75	20	95	99
Lager beer ⁶	71	40	52	6	58	30	281	53	334	492
Leather.....	34	18	36	....	36	15	329	728	4055	4081
Lumber, lath and shingles ⁷	168	66	103	9	114	95	504	86	590	704
Malt.....	20	8	20	....	20	12	116	11	127	147
Machines and machinery ⁸	86	43	62	1	63	41	23	30	267	330
Office and saloon fixtures, etc.....	15	9	23	....	23	6	111	12	123	146
Paints, oils and crude chemicals.....	7	2	4	....	4	5	15	1	16	20
Paper and pulp ⁹	34	3	3	....	3	29	196	32	228	231
Printers' supplies.....	4	....	....	....	....	4	16	1	17	17
Saddlery and harness.....	9	4	9	1	10	5	20	4	24	34
Sash, doors and blinds.....	73	14	86	3	89	29	161	19	180	209
Sheet metal goods.....	26	19	37	....	37	7	49	3	52	89
Ship and boat building ¹⁰	6	2	3	....	3	3	33	5	38	41
Soap, lye and potash, etc.....	9	6	8	2	10	3	41	5	46	56
Staves and heading.....	21	12	26	....	26	9	51	1	52	78
Stone (granite, marble, etc.) ¹¹	10	6	11	1	12	3	24	....	24	36
Straw goods.....	5	1	1	....	1	4	22	7	29	30
Toys and games.....	5	1	2	....	2	4	40	3	43	45
Trunks and valises.....	9	2	4	....	4	7	56	15	71	75
Veneer.....	9	2	2	....	2	7	41	7	48	50
Wagons, carriages and sleighs.....	53	35	54	2	56	18	313	41	357	413
Woodenware.....	11	5	8	....	8	6	27	5	32	40
Woolen and worsted goods.....	17	8	7	3	10	12	86	26	112	122
All industries.....	1245	612	1029	44	1073	614	8531	1588	10119	11192

¹ Three establishments no partners or stockholders reported.

² Two establishments no partners or stockholders reported.

³ Two establishments no partners or stockholders reported.

⁴ One establishment no partners or stockholders reported.

⁵ Two establishments no partners or stockholders reported.

⁶ One establishment no partners or stockholders reported.

⁷ Two establishments no partners or stockholders reported.

⁸ Two establishments no partners or stockholders reported.

⁹ Two establishments no partners or stockholders reported.

¹⁰ One establishment no partners or stockholders reported.

¹¹ One establishment no partners or stockholders reported.

CAPITAL INVESTED: BY INDUSTRIES.

TABLE III.—1897 and 1898.

The capital invested by 1245 establishments is represented in the following table: Comparison is made between the two years, and the relative increase or decrease is noted by amount and per cent.

INDUSTRIES.	Number of establishments	AMOUNT OF CAPITAL INVESTED.		INCREASE (+) OR DECREASE (—) in 1898.	
		1897.	1898.	Amounts	Per cent.
Agricultural implements	31	\$7,826,158	\$10,968,419	+\$3,142,255	+ 40.15
Artisans' tools and hardware specialties	10	585,053	701,199	+ 116,146	+ 19.85
Bicycles, tricycles, etc.	7	980,049	998,465	+ 38,416	+ 3.69
Boots and shoes	24	1,907,423	2,309,116	+ 408,693	+ 21.51
Boxes (wooden and paper)	29	1,480,138	1,807,293	+ 327,154	+ 22.10
Brick, tiles and sewer pipe	23	993,110	1,051,662	+ 58,552	+ 5.89
Brooms, brushes and baskets	19	193,083	219,365	+ 26,272	+ 13.61
Burial cases, caskets, coffins, etc.	4	349,500	591,278	+ 241,775	+ 69.17
Cement, lime, plaster, etc.	12	1,016,205	1,062,873	+ 46,668	+ 4.59
Chairs	13	3,535,742	3,890,850	+ 355,108	+ 10.04
Cigars, snuff and tobacco	54	1,616,419	1,525,513	- 90,906	- 5.62
Clothing	25	1,719,252	1,922,276	+ 203,024	+ 11.81
Confectioneries, crackers, etc.	12	671,742	931,293	+ 259,551	+ 38.62
Cooking and heating apparatus	24	1,737,501	1,638,591	- 98,910	- 5.69
Cooperage	21	530,250	611,344	+ 81,093	+ 15.29
Cotton and linen goods	5	668,349	656,963	- 11,386	- 1.70
Electrical and gas apparatus and supplies	21	2,086,608	2,427,400	+ 340,792	+ 16.33
Flour and feed	86	7,411,133	7,166,921	- 244,212	- 3.29
Food preparations	31	4,751,235	5,369,743	+ 618,508	+ 13.02
Furniture	42	2,776,295	3,114,440	+ 338,145	+ 12.18
Furs, gloves and mittens	11	351,395	407,727	+ 56,332	+ 16.03
Iron goods (malleable)	25	4,427,480	4,701,101	+ 273,621	+ 6.18
Knit goods	15	1,756,464	1,816,373	+ 59,909	+ 3.41
Lager beer	71	35,539,091	36,702,044	+ 1,162,953	+ 3.27
Leather	33	12,124,012	14,082,305	+ 1,958,293	+ 16.15
Lumber, lath and shingles	165	45,642,002	39,945,832	- 5,696,170	- 12.45
Malt	20	5,024,607	5,363,998	+ 339,391	+ 6.77
Machines and machinery	86	9,088,030	11,396,566	+ 2,308,536	+ 25.09
Office and saloon fixtures, etc.	15	816,966	811,861	- 5,105	- 0.62
Paints, oils and crude chemicals	7	922,750	804,700	- 118,050	- 12.79
Paper and pulp	34	9,014,723	11,570,558	+ 2,555,835	+ 28.35
Printers' supplies	4	284,355	284,445	+ 20,090	+ 7.00
Saddlery, harness, etc.	9	202,989	218,600	+ 15,611	+ 7.69
Sash, doors, blinds, etc.	73	5,541,857	5,495,819	- 45,838	- 0.82
Sheet metal goods	26	2,673,622	2,856,573	+ 182,950	+ 6.84
Ship and boat building	6	1,495,259	1,501,888	+ 6,629	+ 0.44
Soap, lye, potash, etc.	9	521,239	551,405	+ 30,166	+ 5.77
Staves and heading	21	425,741	404,746	- 20,995	- 4.93
Stone (granite, marble, etc.)	10	224,878	265,591	+ 40,713	+ 18.11
Straw goods	3	704,900	706,800	+ 1,900	+ 0.27
Toys and games	5	337,624	341,942	+ 4,318	+ 1.25
Trunks, valises, etc.	9	834,179	848,460	+ 14,281	+ 1.71
Veneer	9	305,224	364,397	+ 59,173	+ 19.38
Wagons, carriages and sleighs	53	5,288,915	5,924,185	+ 635,270	+ 12.01
Woodenware	11	1,030,234	1,210,603	+ 180,369	+ 17.50
Woolen and worsted goods	17	2,200,279	2,015,781	- 184,498	- 8.38
All industries	1,245	\$159,760,669	\$198,856,913	+\$39,096,244	+ 24.49

STOCK OR MATERIAL USED: BY INDUSTRIES.

TABLE IV.—1897-98.

The figures in this table for stock or material used, represent the amount reported by 1245 establishments for each year. Comparison between the two years is made and the increase or decrease for 1898 is noted by amount and percentages.

INDUSTRIES.	Number of establishments.	VALUE OF STOCK OR MATERIAL USED.		INCREASE (+) OR DECREASE (—) IN 1898.	
		1897.	1898.	Amounts.	Per cent.
Agricultural implements.....	31	\$2,174,798	\$2,296,422	+\$123,624	+ 5.69
Artisans' tools and hardware specialties.....	10	237,492	271,975	+ 34,483	+ 14.52
Bicycles, tricycle, etc.....	7	910,253	871,318	- 38,935	- 4.27
Boots and shoes.....	24	1,983,766	2,102,780	+ 118,994	+ 5.99
Boxes (wooden and paper).....	29	1,030,949	1,230,423	+ 199,574	+ 19.35
Brick, tiles and sewer pipe.....	23	66,990	78,873	+ 11,913	+ 17.78
Brooms, brushes and baskets.....	19	73,353	89,450	+ 16,115	+ 21.96
Burial cases, caskets, coffins, etc.....	4	284,192	209,374	- 74,818	- 26.33
Cement, lime, plaster, etc.....	12	277,809	324,453	+ 46,644	+ 16.79
Chairs.....	13	1,077,342	1,149,372	+ 72,030	+ 6.68
Cigars, snuff and tobacco.....	14	1,324,851	1,338,296	+ 13,445	+ 1.01
Clothing.....	25	1,584,826	1,835,800	+ 250,974	+ 15.84
Confectioneries, crackers, etc.....	12	861,630	1,014,684	+ 153,054	+ 17.65
Cooking and heating apparatus.....	24	548,257	725,319	+ 177,062	+ 32.11
Cooperage.....	21	946,976	502,713	- 444,263	- 46.92
Cotton and linen goods.....	5	320,070	304,585	- 15,485	- 4.81
Electrical and gas apparatus and supplies.....	21	870,782	906,698	+ 35,916	+ 4.13
Flour and feed.....	86	18,724,577	20,935,649	+ 2,211,072	+ 11.80
Food preparations.....	31	11,338,805	15,011,298	+ 3,672,493	+ 32.38
Furniture.....	42	1,353,503	1,651,630	+ 298,127	+ 21.99
Furs, gloves and mittens.....	11	309,404	408,897	+ 99,493	+ 32.15
Iron goods (malleable).....	23	8,010,246	4,073,776	- 3,936,470	- 49.14
Knit goods.....	15	792,277	902,226	+ 109,949	+ 13.87
Lager beer.....	71	3,702,671	4,071,403	+ 368,732	+ 9.95
Leather.....	34	11,320,816	11,983,276	+ 662,460	+ 5.85
Lumber, lath and shingles.....	163	12,147,822	13,193,042	+ 1,045,220	+ 8.59
Malt.....	20	2,451,807	2,875,457	+ 423,650	+ 17.26
Machines and machinery.....	66	3,349,014	3,998,147	+ 649,133	+ 19.39
Office and saloon fixtures, etc.....	15	261,905	384,681	+ 122,776	+ 46.87
Paints, oils and crude chemicals.....	7	926,568	784,522	- 142,046	- 15.33
Paper and pulp.....	34	3,481,577	5,085,298	+ 1,603,721	+ 46.06
Printers' supplies.....	4	90,964	120,599	+ 29,635	+ 32.57
Saddlery, harness, etc.....	9	236,897	258,315	+ 21,418	+ 9.04
Sash, doors, blinds, etc.....	73	2,479,007	2,489,626	+ 10,619	+ 0.43
Sheet metal goods.....	26	1,898,543	2,005,362	+ 106,819	+ 5.63
Ship and boat building.....	6	291,677	352,776	+ 61,099	+ 20.95
Soap, lye, potash, etc.....	9	382,069	489,247	+ 107,178	+ 28.06
Staves and heading.....	21	239,193	202,842	- 36,351	- 15.20
Stone (granite, marble, etc.).....	10	113,895	106,694	- 7,201	- 6.32
Straw goods.....	5	360,168	569,449	+ 209,281	+ 58.10
Toys and games.....	5	97,881	119,966	+ 22,085	+ 22.57
Trunks, valises, etc.....	9	411,193	422,351	+ 11,158	+ 2.72
Veneer.....	9	137,248	152,810	+ 15,562	+ 11.33
Wagons, carriages and sleighs.....	53	2,116,750	2,491,797	+ 375,047	+ 17.71
Woodenware.....	11	767,692	872,933	+ 105,241	+ 13.71
Woolen and worsted goods.....	17	844,629	989,618	+ 144,989	+ 17.16
All industries.....	1,245	\$98,130,070	\$112,630,165	+ \$14,500,115	+ 14.82

VALUE OF GOODS MADE AND WORK DONE: BY INDUSTRIES.

TABLE V.—1897-98.

The figures here show the value of the goods made in 1897 and 1898 by the 1245 establishments considered comparisons between the two years are also made and the increase or decrease in 1898 as compared with 1897 is noted by amount and percentages.

INDUSTRIES.	Number of establishments.	VALUE OF GOODS MADE AND WORK DONE.		INCREASE (+) OR DECREASE (—) IN 1898.	
		1897.	1898.	Amounts.	Per cent.
Agricultural implements.....	31	\$1,242,134	\$5,834,207	+ \$1,592,073	+ 37.53
Artisans' tools and hardware specialties.....	10	624,404	761,892	+ 110,488	+ 22.49
Bicycles, tricycles, etc.....	7	1,509,852	1,568,843	+ 58,991	+ 3.90
Boots and shoes.....	24	3,416,422	3,695,017	+ 278,625	+ 8.15
Boxes (wooden and paper).....	29	1,819,952	2,032,709	+ 202,757	+ 10.96
Brick, tile and sewer pipe.....	3	225,824	261,082	+ 35,258	+ 15.60
Brooms, brushes and baskets.....	19	174,404	215,425	+ 41,021	+ 23.52
Burial cases, caskets, coffins, etc.....	4	559,858	406,489	- 153,429	- 27.40
Cement, lime, plaster, etc.....	12	603,910	740,489	+ 137,179	+ 22.90
Chairs.....	13	2,494,412	2,918,343	+ 423,931	+ 17.00
Cigars, snuff and tobacco.....	54	2,206,008	2,261,614	+ 55,609	+ 2.65
Clothing.....	23	2,455,824	3,411,936	+ 956,112	+ 39.32
Confectioneries, crackers, etc.....	12	1,570,201	1,647,124	+ 76,923	+ 4.95
Cooking and heating apparatus.....	24	1,325,252	1,838,183	+ 512,941	+ 38.70
Cooperage.....	21	717,497	938,604	+ 221,107	+ 30.81
Cotton and linen goods.....	5	546,324	509,506	- 36,818	- 6.73
Electrical and gas apparatus and supplies.....	21	2,156,197	2,320,182	+ 163,985	+ 7.64
Flour and feed.....	86	22,016,961	23,629,176	+ 1,612,195	+ 7.32
Food preparations.....	31	13,717,083	17,684,595	+ 3,966,512	+ 28.90
Furniture.....	42	2,716,577	3,200,298	+ 483,721	+ 17.82
Furs, gloves and mittens.....	11	528,438	681,119	+ 152,671	+ 28.90
Iron goods (malleable).....	25	6,342,249	8,148,694	+ 1,806,445	+ 28.45
Knit goods.....	15	1,654,638	1,890,761	+ 236,123	+ 14.25
Lager beer.....	71	16,945,217	17,214,845	+ 269,628	+ 1.80
Leather.....	33	15,153,381	15,873,458	+ 720,097	+ 4.75
Lumber, lath and shingles.....	163	22,043,162	24,682,967	+ 2,639,805	+ 11.97
Malt.....	20	3,681,990	4,210,341	+ 528,351	+ 15.16
Machines and machinery.....	86	8,155,581	9,787,484	+ 1,631,903	+ 20.00
Office and saloon fixtures, etc.....	15	687,727	806,002	+ 118,275	+ 17.19
Paints, oils and crude chemicals.....	7	1,315,557	1,040,254	- 275,303	- 20.92
Paper and pulp.....	34	6,555,806	8,519,311	+ 1,963,505	+ 30.00
Printers' supplies.....	4	250,469	303,950	+ 53,481	+ 21.88
Saddlery and harness, etc.....	9	414,175	433,714	+ 19,539	+ 4.71
Sash doors and blinds, etc.....	73	5,280,706	5,298,430	+ 17,724	+ 0.71
Sheet metal goods.....	26	3,376,417	3,483,993	+ 107,576	+ 3.18
Ship and boat building.....	6	696,473	970,848	+ 274,375	+ 45.66
Soap, lye, potash, etc.....	9	675,411	760,608	+ 85,195	+ 12.61
Staves and heading.....	21	524,114	467,980	- 56,134	- 10.75
Stone (granite, marble, etc.).....	10	311,886	301,392	- 10,494	- 3.36
Straw goods.....	5	852,521	1,147,917	+ 295,396	+ 34.64
Toys and games.....	5	226,606	230,268	+ 3,662	+ 1.62
Trunks, valises, etc.....	9	843,390	890,787	+ 47,397	+ 5.62
Veneer.....	9	373,419	471,696	+ 98,277	+ 26.29
Wagons, carriages and sleighs.....	53	4,256,259	4,957,083	+ 700,794	+ 16.46
Woodenware.....	11	1,560,375	1,774,698	+ 214,323	+ 13.73
Woolen and worsted goods.....	17	1,613,817	1,738,434	+ 124,617	+ 7.72
All industries.....	1,245	\$169,946,673	\$192,070,633	+ \$22,123,960	+ 13.01

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED—
BY INDUSTRIES.

The terms "Period of Employment of Smallest Number" and "Period of Employment of Greatest Number," as used in the following table, are meant those times, *as regards aggregate number of persons employed*, when the smallest or greatest number, respectively, was employed. Wage earners only are considered; officers, clerks or other salaried persons are not included.

TABLE VI.—AGGREGATES—1897.

INDUSTRIES.	No. of establishments.	Aggregate average number of persons employed.	AGGREGATE OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF—		Excess greatest over smallest number.
			Smallest number.	Greatest number.	
Agricultural implements.....	31	1,166	1,568	2,386	818
Artisans' tools and hardware specialties.....	10	443	214	801	587
Beverages (not spirituous, soft drinks).....	18	201	160	241	81
Bicycles, tricycles, etc.....	7	658	301	962	661
Boots and shoes.....	24	2,299	2,186	2,437	271
Boxes (wooden and paper).....	29	1,336	1,180	1,551	374
Brick, tile and sewer pipe.....	23	230	56	632	576
Brooms, brushes, etc.....	19	207	153	278	125
Burial cases, caskets and coffins.....	4	313	306	331	25
Cement, lime, plaster, etc.....	12	328	193	553	360
Chairs.....	13	3,091	2,992	3,319	327
Chemical preparations.....	13	146	136	166	30
Cigars, snuff and tobacco.....	54	955	927	995	68
Clothing.....	25	1,620	1,572	1,736	164
Coal and wood.....	28	1,759	1,280	2,719	1,439
Confectioneries, crackers, etc.....	19	734	635	891	256
Cooking and heating apparatus.....	24	1,247	1,137	1,578	441
Cooperage.....	21	627	543	773	230
Cotton and linen goods.....	5	479	274	60	326
Electrical and gas apparatus and supplies.....	21	1,045	998	1,179	181
Electrical and gas lighting, power and street railways.....	49	1,932	1,784	2,207	423
Fancy articles.....	8	126	87	177	90
Flour and feed.....	86	1,132	1,109	1,205	97
Food preparations.....	31	2,118	1,517	4,317	2,800
Furniture.....	42	2,441	2,205	2,838	633
Furs, gloves and mittens.....	11	284	229	335	109
Grain and warehouse men.....	12	181	151	281	130
Iron goods (malleable).....	25	3,350	2,590	4,084	1,490
Iron (pig).....	2	144	89	220	131
Knit goods.....	15	1,751	1,366	1,953	587
Lager beer.....	71	3,106	2,384	3,352	968
Laundries.....	75	783	700	874	174
Leather.....	33	4,754	4,201	5,329	1,128
Lithographing and engraving.....	7	440	431	454	23
Lumber, lath and shingles.....	163	11,827	5,195	19,706	14,511
Malt.....	20	514	363	590	227
Machines and machinery.....	86	4,436	4,201	5,256	1,055
Mixed textiles.....	9	348	317	428	111
Office and saloon fixtures, etc.....	15	558	422	713	291
Paints, oils and crude chemicals.....	7	139	126	164	38
Paper and pulp.....	34	3,152	2,893	3,716	823
Printers' supplies.....	4	190	157	199	42
Railway equipment.....	20	9,933	9,433	10,416	983
Saddlery, harness, etc.....	9	215	193	264	71
Sash, doors, blinds and mouldings.....	73	3,707	2,794	4,015	1,227
Sheet metal goods.....	28	2,042	1,833	2,289	456
Ship building.....	6	622	310	939	629

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED—
BY INDUSTRIES.—Continued.

The terms "Period of Employment of Smallest Number" and "Period of Employment of Greatest number," as used in the following table are meant those times, *as regards aggregate number of persons employed*, when the smallest or greatest number, respectively, was employed. Wage earners only are considered; officers, clerks or other salaried persons are not included.

TABLE VI.—Continued.—AGGREGATES, 1897.

INDUSTRIES.	No. of establishments	Aggregate average number of persons employed.	AGGREGATE OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF—		Excess greatest over smallest number.
			Smallest number.	Greatest number.	
Soap, lye and potash.....	9	165	152	181	29
Staves and heading.....	21	521	375	760	405
Stone (granite, marble, etc.).....	10	182	116	246	130
Straw goods.....	5	555	343	817	474
Toys and games.....	5	253	186	364	178
Trunks, valises, etc.	8	635	514	710	196
Veneer.....	9	385	331	494	163
Wagons, carriages and sleighs.....	53	2,370	2,193	2,641	448
Woodenware.....	11	1,324	1,172	1,470	298
Woolen and worsted goods.....	17	1,048	907	1,223	316
Miscellaneous.....	13	380	373	419	46
All industries.....	1,499	87,534	71,207	109,839	38,632

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED—BY INDUSTRIES.

The terms "Period of Employment of Smallest Number" and "Period of Employment of Greatest Number," as used in the following table, are meant those times, *as regards aggregate number of persons employed*, when the smallest or greatest number, respectively, was employed. Wage earners only are considered; officers, clerks or other salaried persons are not included.

TABLE VII.—AGGREGATES, 1898.

INDUSTRIES.	No. of establishments.	Aggregate average number of persons employed.	AGGREGATE OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF—		Excess greatest over smallest number.
			Smallest number.	Greatest number.	
Agricultural implements.....	31	2,454	2,226	3,296	1,060
Artisans' tools and hardware specialties.....	10	687	481	966	485
Beverages (not spirituous, soft drinks).....	18	227	171	279	108
Bicycles, tricycles, etc.....	7	732	297	1,137	840
Boots and shoes.....	24	2,446	2,298	2,532	234
Boxes (wooden and paper).....	29	1,521	1,314	1,786	472
Brick, tile and sewer pipe.....	23	318	60	681	621
Brooms, brushes, etc.....	19	227	167	320	153
Burial cases, caskets and coffins.....	4	343	331	357	6
Cement, lime, plaster, etc.....	12	410	250	56	310
Chairs.....	13	3,435	3,029	3,731	702
Chemical preparations.....	18	131	121	189	38
Cigars, snuff and tobacco.....	54	1,006	963	1,079	116
Clothing.....	25	2,203	1,993	2,438	445
Coal and wood.....	28	1,847	1,256	2,866	1,360
Confectioneries, crackers, etc.....	12	826	691	945	254
Cooking and heating apparatus.....	21	1,321	1,144	1,534	390
Cooperage.....	21	702	691	847	156
Cotton and linen goods.....	5	450	446	455	9
Electrical and gas apparatus and supplies.....	21	1,120	1,014	1,225	178
Electrical and gas lighting power and street railways.....	49	1,970	1,724	2,299	572
Fancy articles.....	8	182	145	210	68
Flour and feed.....	86	1,138	1,082	1,334	248
Food preparations.....	31	2,606	1,633	5,739	4,133
Furniture.....	42	2,681	2,454	3,133	678
Furs, gloves and mittens.....	11	327	265	38	119
Grain and warehouse men.....	12	189	131	307	176
Iron goods (malleable).....	23	4,474	3,956	5,413	1,457
Iron (pig).....	2	202	188	22	38
Knit goods.....	15	1,963	1,868	2,17	310
Lager beer.....	71	3,050	2,874	3,235	365
Laundries.....	75	802	700	98	281
Leather.....	33	4,613	4,224	5,17	953
Lithographing and engraving.....	7	434	409	45	46
Lumber, lath and shingles.....	168	12,651	6,513	19,8	13,368
Malt.....	20	515	428	55	127
Machines and machinery.....	86	5,159	4,770	5,78	1,013
Mixed textiles.....	9	451	381	56	181
Office and saloon fixture, etc.....	16	658	557	82	264
Paints, oils and crude chemicals.....	7	112	102	12	24
Paper and pulp.....	34	3,527	3,36	3,826	590
Printers' supplies.....	4	227	198	246	48
Railway equipment.....	20	10,773	10,405	11,301	696
Saddlery, harness, etc.....	9	206	144	271	123
Sash, doors, blinds, etc.....	73	3,381	2,872	4,214	1,312
Sheet metal goods.....	26	2,135	1,884	2,344	460
Ship building.....	6	903	549	1,543	994

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED—
BY INDUSTRIES—Continued.

The terms "Period of Employment of Smallest Number" and "Period of Employment of Greatest Number," as used in the following table, are meant those times, *as regards aggregate number of persons employed*, when the smallest or greatest number, respectively, was employed. Wage earners only are considered; officers, clerks or other salaried persons are not included.

TABLE VII.—Continued—AGGREGATES, 1898.

INDUSTRIES.	No. of establishments.	Aggregate average number of persons employed.	AGGREGATE OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF—		Excess greatest over smallest number.
			Smallest number.	Greatest number.	
Soap, lye and potash	9	184	150	193	13
Staves and heading	21	464	335	683	350
Stone (granite, marble, etc.)	10	145	103	227	122
Straw goods	5	688	460	1,031	571
Toys and games	5	320	227	439	212
Trunks and valises, etc	9	648	625	719	94
Veneer	9	445	369	540	177
Wagons, carriages and sleighs	53	2,589	2,244	2,963	719
Woodenware	11	1,441	1,267	1,566	299
Woolen and worsted goods	17	1,020	923	1,216	293
Miscellaneous	13	471	230	423	193
All industries	1,499	96,245	79,663	119,809	40,146

RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY INDUSTRIES.

A comparison of the excess of greatest over smallest number of persons employed in both years as given in this table, and the increase and decrease for 1898 as compared with 1897 is noted in both number and percentage. Wage earners only are considered; officers, clerks, and other salaried persons are not included.

TABLE VIII.—1897-98.

INDUSTRIES.	No. of establishments.	EXCESS OF GREATEST OVER SMALLEST NUMBER OF PERSONS EMPLOYED.		Increase (+) or decrease (-) in number 1898.
		1897.	1898.	
Agricultural implements.....	31	818	1,080	+ 242
Artisans' tools and hardware specialties.....	10	587	485	- 102
Beverages (not spirituous, soft drinks).....	18	81	108	+ 27
Bicycles, tricycles, etc.....	7	661	840	+ 179
Boots and shoes.....	24	271	254	- 17
Boxes (wooden, and paper).....	29	374	472	+ 98
Brick, tiles and sewer pipe.....	23	576	621	+ 45
Brooms, brushes, etc.....	19	138	153	+ 15
Burial cases, caskets and coffins.....	4	25	6	- 19
Cement, lime, plaster, etc.....	12	360	310	- 50
Chairs.....	13	327	702	+ 375
Chemical preparations.....	13	30	38	+ 8
Cigars, snuff and tobacco.....	54	68	116	+ 48
Clothing.....	25	226	445	+ 219
Coal and wood.....	28	1,439	1,530	+ 141
Confectioneries, crackers, etc.....	12	256	254	- 2
Cooking and heating apparatus.....	24	441	380	- 61
Cooperage.....	21	230	156	- 74
Cotton and linen goods.....	5	328	9	- 317
Electrical and gas apparatus and supplies.....	21	181	178	- 3
Electrical and gas lighting power and street railways	49	443	572	+ 129
Fancy articles.....	8	90	68	- 22
Flour and feed.....	86	97	248	+ 151
Food preparations.....	31	2,800	4,153	+ 1,353
Furniture.....	42	673	678	+ 45
Furs, gloves and mittens.....	11	109	119	+ 10
Grain and warehouse men.....	12	130	176	+ 46
Iron goods (malleable).....	25	1,490	1,457	- 33
Iron (pig).....	2	181	38	- 143
Knit goods.....	15	587	310	- 277
Lager beer.....	71	368	385	+ 17
Laundries.....	75	174	281	+ 107
Leather.....	33	1,128	963	- 175
Lithographing and engraving.....	7	23	46	+ 23
Lumber, lath and shingles.....	168	14,511	13,345	- 1,166
Malt.....	20	227	127	- 100
Machines and machinery.....	86	1,055	1,013	- 42
Mixed textiles.....	9	111	181	+ 70
Office and saloon fixtures, etc.....	15	291	264	- 27
Paints, oils and crude chemicals.....	7	38	24	- 14
Paper and pulp.....	34	823	570	- 253
Printers' supplies.....	4	12	45	+ 33
Railway equipment.....	20	933	896	- 37
Saddlery, harness, etc.....	9	78	128	+ 50
Sash, doors, blinds and mouldings.....	73	1,227	1,342	+ 115
Sheet metal goods.....	26	406	480	+ 74
Ship building.....	6	629	994	+ 365
Soap, lye and potash.....	9	29	13	- 16
Staves and heading.....	21	405	350	- 55
Stone (granite, marble, etc.).....	10	130	122	- 8
Straw goods.....	5	474	571	+ 97
Toys and games.....	5	178	212	+ 34
Trunks and valises, etc.....	9	198	94	- 104
Veneer.....	9	163	177	+ 14
Wagons, carriages and sleighs.....	53	448	719	+ 271
Woodenware.....	11	236	229	- 7
Woolen and worsted goods.....	17	316	283	- 33
Miscellaneous.....	13	46	193	+ 147
All industries.....	1,499	38,632	40,126	+ 1,494

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED—
BY INDUSTRIES.

In this table averages for each establishment are given. These have been arrived at by dividing the aggregates given in table VI, by the number of establishments in each industry. Wage earners only are considered; officers, clerks and other salaried persons are not included.

TABLE IX.—AVERAGES, 1897.

INDUSTRIES.	No. of establishments.	NUMBER OF PERSONS EMPLOYED IN EACH ESTABLISHMENT.			
		Average number.	Smallest number.	Greatest number.	Excess of greatest over smallest.
Agricultural implements.....	31	60	50	77	27
Artisans' tools and hardware specialties....	10	44	21	80	59
Beverages (not spirituous, soft drinks).....	18	11	9	13	4
Bicycles, tricycles, etc.....	7	94	43	137	94
Boots and shoes.....	24	96	91	102	11
Boxes, wooden and paper).....	29	45	40	53	13
Brick, tile and sewer pipe.....	23	12	2	27	25
Brooms, brushes, etc.....	19	10	8	15	7
Burial cases, caskets, coffins, etc.....	4	78	76	92	6
Cement, lime, plaster, etc.....	12	27	16	46	30
Chairs.....	13	237	230	254	24
Chemical preparations.....	13	11	10	12	2
Cigars, snuff and tobacco.....	54	17	17	18	1
Clothing.....	25	61	52	71	19
Coal and wood.....	28	62	45	97	52
Conffectioneries, crackers, etc.....	12	61	53	74	21
Cooking and heating apparatus.....	24	52	47	65	18
Cooperage.....	21	29	28	36	10
Cotton and linen goods.....	5	95	55	120	65
Electrical and gas apparatus and supplies.....	21	49	47	56	9
Electrical and gas lighting, power and street railways.....	49	39	36	45	9
Fancy articles.....	8	16	11	22	11
Flour and feed.....	83	13	12	14	2
Food preparations.....	31	68	48	139	91
Furniture.....	42	58	52	67	15
Furs, gloves and mittens.....	11	26	20	30	10
Grain and warehouse men.....	12	15	12	23	11
Iron goods (malleable).....	25	134	103	163	60
Iron (pig).....	2	72	44	110	66
Knit goods.....	15	116	91	130	39
Lager beer.....	71	43	42	47	5
Laundries.....	75	10	9	11	2
Leather.....	33	144	127	161	34
Lithographing and engraving.....	7	62	61	64	3
Lumber, lath and shingles.....	168	70	31	117	86
Malt.....	20	25	18	29	11
Machines and machinery.....	86	52	43	61	13
Mixed textiles.....	9	38	35	47	12
Office and saloon fixtures, etc.....	15	37	28	47	19
Paints, oils and crude chemicals.....	7	19	13	23	5
Paper and pulp.....	34	92	85	109	24
Printers' supplies.....	4	47	46	49	3
Railway equipment.....	20	496	474	520	46
Saddlery, harness, etc.....	9	24	20	29	9
Sash, doors, blinds and mouldings.....	78	48	38	55	17
Sheet metal goods.....	26	78	70	86	16
Ship and boat building.....	6	103	51	156	106

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED—
BY INDUSTRIES—Continued.

In this table averages for each establishment are given. There have been arrived at by dividing the aggregates given in table VI; by the number of establishments in each industry. Wage earners only are considered; officers, clerks and other salaried persons are not included.

TABLE IX.—Continued—AVERAGES, 1897.

INDUSTRIES.	No. of establishments.	NUMBER OF PERSONS EMPLOYED IN EACH ESTABLISHMENT.			
		Average number.	Smallest number.	Greatest number.	Excess of greatest over smallest.
Soap, lye, potash, etc	9	18	17	20	3
Staves and heading	21	25	18	37	19
Stone (granite, marble, etc.)	10	18	11	24	13
Straw goods	5	111	68	163	95
Toys and games	5	80	37	70	33
Trunks and valises, etc	9	70	57	79	22
Veneer	9	42	36	55	19
Wagons, carriages and sleighs	53	44	41	49	8
Woodenware	11	120	106	133	27
Woolen and worsted goods	17	61	53	72	19
Miscellaneous	13	29	29	32	3
All industries	1,499	58	48	73	25

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED—
BY INDUSTRIES.

In this table averages for each establishment are given. These have been arrived at by dividing the aggregates given in table VI; by the number of establishments in each industry. Wage earners only are considered; officers, clerks and other salaried persons are not included.

TABLE X.—AVERAGES, 1898.

INDUSTRIES.	No. of establishments.	NUMBER OF PERSONS EMPLOYED IN EACH ESTABLISHMENT.			Excess of greatest over smallest.
		Average number.	Smallest number.	Greatest number.	
Agricultural implements	31	79	72	106	34
Artisans' tools and hardware specialties...	10	69	48	97	49
Beverages (not spirituous, soft drinks)	18	13	9	15	6
Bicycles, tricycles, etc.	7	104	42	162	120
Boots and shoes	24	102	96	106	10
Boxes (wooden and paper)	29	52	45	62	17
Brick, tile and sewer pipe	23	14	3	30	27
Brooms, brushes, etc.	19	12	9	17	8
Barrel cases, caskets, coffins, etc.	4	83	83	84	1
Cement, lime, plaster, etc.	12	34	21	47	26
Chairs	13	268	233	287	54
Chemical preparations	13	10	9	12	3
Cigars, snuff and tobacco	54	19	18	20	2
Clothing	23	88	80	97	19
Coal and wood	28	66	46	102	56
Confectioneries, crackers, etc.	12	69	57	79	22
Cooking and heating apparatus	24	55	48	63	15
Cooperage	21	33	33	40	7
Cotton and linen goods	5	50	89	91	2
Electrical and gas apparatus and supplies ..	21	53	50	58	8
Electrical and gas lighting power and street railways	49	40	33	45	10
Fancy articles	8	23	18	27	9
Flour and feed	56	13	12	15	3
Food preparations	31	84	53	168	183
Furniture	42	64	58	75	17
Furs, gloves and mittens	11	30	24	54	30
Grain and warehouse men	12	16	11	26	15
Iron goods (malleable)	25	179	158	216	58
Iron (pig)	2	101	91	113	19
Knit goods	15	132	125	145	20
Lager beer	71	43	40	46	6
Laundries	75	11	9	13	4
Leather	33	141	128	157	29
Lithographing and engraving	7	62	55	65	7
Lumber, lath and shingles	168	75	39	118	79
Malt	20	26	21	28	7
Machines and machinery	88	60	55	67	12
Mixed textiles	9	50	42	62	20
Office and saloon fixtures, etc.	15	44	37	55	18
Paints, oils and crude chemicals	7	16	14	18	4
Paper and pulp	34	101	93	113	18
Printers' supplies	4	56	49	61	12
Railway equipment	20	539	520	563	45
Saddlery, harness, etc.	9	23	16	30	14
Sash, doors, blinds, etc.	73	46	39	58	19
Sheet metal goods	26	82	72	90	18
Ship building	6	150	91	257	166

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED—
BY INDUSTRIES—Continued.

In this table averages for each establishment are given. These have been arrived at by dividing the aggregates given in table VI; by the number of establishments in each industry. Wage earners only are considered; officers, clerks and other salaried persons are not included.

TABLE X.—Continued—AVERAGES, 1898.

INDUSTRIES.	No. of establishments.	NUMBER OF PERSONS EMPLOYED IN EACH ESTABLISHMENT.			Excess of greatest over smallest.
		Average number	Smallest number.	Greatest number.	
Soap, lye and potash.....	9	20	20	21	1
Staves and heading.....	21	22	16	33	17
Stone (granite, marble, etc.)	10	14	10	24	13
Straw goods.....	5	137	92	208	116
Toys and games	5	61	45	88	43
Trunks and valises, etc.....	9	72	69	80	11
Veneer	9	49	41	61	20
Wagons, carriages and sleighs.....	53	49	42	56	14
Woodenware.....	11	131	115	142	27
Woolen and worsted goods.....	17	60	54	71	17
Miscellaneous.....	13	36	18	32	14
All industries.....	1,490	64	53	80	27

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

AGRICULTURAL IMPLEMENTS.

(31 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	1,864	1	1,865	2,236	2	2,238
February	2,146	1	2,147	2,425	2	2,427
March	2,199	1	2,200	2,531	2	2,533
April	1,990	1	2,000	2,468	4	2,472
May	1,793	1	1,794	2,301	4	2,305
June	1,749	1	1,750	2,489	4	2,493
July	1,716	1	[1,717	2,469	3	2,472
August	1,590	1	1,591	2,233	3	2,226
September	1,567	1	1,568	2,276	2	2,278
October	1,685	1	1,686	2,407	2	2,409
November	1,877	1	1,878	2,643	2	2,645
December	2,191	1	2,192	2,948	2	2,950

ARTISANS' TOOLS AND HARDWARE SPECIALTIES.

(10 establishments.)

January	494	.....	494	856	.....	856
February	441	.....	441	835	.....	835
March	380	.....	380	740	.....	740
April	394	.....	381	687	.....	687
May	383	.....	383	605	.....	608
June	331	.....	331	500	.....	500
July	335	.....	335	481	.....	481
August	356	.....	356	498	.....	498
September	420	.....	420	618	.....	618
October	481	.....	486	713	.....	713
November	592	.....	592	815	.....	815
December	714	.....	714	909	.....	909

BEVERAGES (NOT SPIRITUOUS, SOFT DRINKS).

(18 establishments.)

January	159	1	160	170	1	171
February	171	3	174	185	15	200
March	180	20	200	213	18	231
April	177	17	194	226	18	244
May	198	20	218	227	18	245
June	192	18	210	246	18	264
July	212	20	232	241	18	259
August	210	18	228	222	17	239
September	208	20	228	224	18	242
October	176	20	194	201	17	218
November	186	22	208	189	17	206
December	131	21	202	187	18	205

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

BICYCLES, TRICYCLES, ETC.

(7 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	686	.....	686	794	.....	794
February	759	.....	759	849	.....	849
March	773	.....	773	892	.....	892
April	858	1	859	1,017	.....	1,017
May	862	1	863	1,067	.....	1,067
June	709	1	710	887	.....	887
July	598	.....	598	498	.....	498
August	505	.....	505	297	.....	297
September	301	.....	301	333	.....	333
October	530	.....	530	461	.....	461
November	626	.....	626	769	.....	769
December	684	.....	684	926	.....	926

BOOTS AND SHOES.

(24 establishments.)

January	1,618	779	2,397	1,636	795	2,431
February	1,630	810	2,440	1,681	817	2,498
March	1,591	793	2,384	1,701	839	2,540
April	1,593	775	2,368	1,661	814	2,475
May	1,575	743	2,318	1,655	806	2,461
June	1,506	714	2,220	1,614	784	2,398
July	1,507	686	2,193	1,542	756	2,298
August	1,547	719	2,266	1,663	810	2,473
September	1,534	719	2,253	1,668	804	2,472
October	1,548	700	2,248	1,642	793	2,435
November	1,501	685	2,186	1,654	778	2,432
December	1,568	743	2,311	1,669	783	2,442

BOXES (WOODEN AND PAPER).

(29 establishments.)

January	836	344	1,180	923	391	1,314
February	831	354	1,185	1,047	392	1,439
March	901	395	1,296	1,110	402	1,512
April	920	382	1,302	1,134	411	1,545
May	954	377	1,331	1,124	413	1,537
June	989	375	1,364	1,224	420	1,644
July	1,029	373	1,402	1,160	416	1,576
August	1,012	369	1,381	1,162	415	1,577
September	1,049	381	1,440	1,164	439	1,593
October	1,021	398	1,419	1,137	440	1,577
November	1,022	406	1,428	1,113	328	1,441
December	907	396	1,303	965	433	1,398

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

BRICK, TILE AND SEWER PIPE.

(23 establishments.)

MONTHS	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	56	.....	56	60	.....	60
February	80	.....	80	67	.....	67
March	77	.....	77	86	.....	86
April	204	.....	204	226	.....	226
May	462	.....	462	463	.....	468
June	570	.....	570	568	.....	563
July	541	.....	541	593	.....	593
August	428	.....	428	538	.....	538
September	379	.....	379	512	.....	512
October	329	.....	329	363	.....	363
November	149	.....	149	228	.....	228
December	80	.....	80	106	.....	106

BROOMS, BRUSHES AND BASKETS.

(19 establishments.)

January	153	2	155	158	9	167
February	158	2	160	182	9	191
March	209	6	215	192	9	201
April	213	6	219	216	12	228
May	228	6	234	226	12	238
June	221	6	227	236	12	248
July	233	6	239	239	12	251
August	240	6	246	271	12	283
September	233	2	235	265	12	277
October	214	2	218	233	9	242
November	182	2	184	202	9	211
December	151	2	153	171	9	180

BURIAL CASES, COFFINS, ETC.

(4 establishments.)

January	232	74	306	264	70	334
February	234	74	308	264	70	334
March	234	74	308	265	70	335
April	237	74	311	264	70	334
May	237	74	311	264	70	334
June	242	74	316	264	70	334
July	243	74	317	262	70	332
August	242	74	316	262	70	332
September	242	74	316	261	70	331
October	243	74	317	261	70	331
November	245	74	319	263	70	333
December	244	74	318	263	70	333

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

CEMENT, LIME, PLASTER, ETC.

(12 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	192	1	193	247	3	250
February	251	1	252	250	3	253
March	226	1	227	325	3	328
April	241	2	243	466	4	470
May	338	2	340	431	4	435
June	364	2	366	435	4	439
July	341	2	343	461	4	465
August	398	2	400	479	4	483
September	457	2	459	510	4	514
October	494	2	496	518	4	522
November	337	1	338	414	2	416
December	280	1	281	348	2	350

CHAIRS.

(13 establishments.)

January	2,486	248	2,734	2,781	248	3,029
February	2,726	276	3,002	3,041	287	3,328
March	2,842	287	3,129	3,134	303	3,437
April	2,827	280	3,107	3,120	308	3,428
May	2,913	280	3,193	3,131	306	3,437
June	2,800	271	3,071	3,078	301	3,379
July	2,737	255	2,992	3,032	296	3,328
August	2,818	249	3,067	3,150	276	3,426
September	2,889	281	3,170	3,196	280	3,476
October	2,953	288	3,241	3,295	286	3,581
November	2,983	295	3,278	3,311	302	3,613
December	2,824	279	3,103	3,084	268	3,352

CHEMICAL PREPARATIONS.

(13 establishments.)

January	121	18	139	87	24	121
February	118	18	136	89	35	124
March	120	18	138	98	37	135
April	120	20	140	99	33	131
May	123	19	142	101	31	132
June	124	21	145	106	33	139
July	120	23	143	102	28	130
August	122	24	146	108	28	136
September	122	34	156	108	32	140
October	125	36	161	113	34	147
November	120	35	155	108	33	141
December	120	28	148	104	31	135

TABLE XI.—*Persons employed, by industries, by months, 1897-1898.*

CIGARS, SNUFF AND TOBACCO.

(54 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	658	269	927	660	303	963
February	673	278	951	686	312	998
March	662	276	938	686	317	1,003
April	667	279	936	691	340	1,031
May	696	294	980	699	345	1,044
June	679	299	978	701	342	1,043
July	659	285	944	693	318	1,011
August	676	292	968	693	301	984
September	675	290	965	683	302	985
October	670	284	954	687	306	993
November	679	281	960	698	307	1,005
December	680	280	960	708	306	1,014

CLOTHING.

(25 establishments.)

January	237	1,294	1,531	264	1,729	1,993
February	296	1,293	1,589	265	1,853	2,118
March	307	1,266	1,593	272	1,897	2,169
April	326	1,278	1,604	284	1,873	2,157
May	330	1,292	1,622	308	1,938	2,246
June	335	1,284	1,619	296	1,890	2,186
July	320	1,297	1,617	295	1,896	2,191
August	326	1,246	1,572	310	1,967	2,277
September	351	1,304	1,635	312	1,997	2,309
October	332	1,367	1,699	315	2,017	2,332
November	326	1,346	1,672	311	1,986	2,297
December	322	1,310	1,632	303	1,912	2,215

COAL AND WOOD.

(28 establishments.)

January	1,396	1,296	1,742	1,742
February	1,373	1,373	1,483	1,483
March	1,290	1,290	1,286	1,286
April	1,369	1,369	1,367	1,367
May	1,550	1,550	1,499	1,499
June	1,667	1,667	1,658	1,658
July	1,674	1,674	1,833	1,833
August	1,711	1,711	2,092	2,092
September	1,679	1,679	2,170	2,170
October	2,554	2,554	2,368	2,368
November	2,507	2,507	2,393	2,393
December	2,449	2,449	2,287	2,287

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

CONFECTIONERIES, CRACKERS, ETC.

(12 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	322	313	635	342	348	691
February	318	326	644	327	371	698
March	336	352	688	336	393	729
April	329	372	701	339	426	765
May	341	379	720	349	445	794
June	351	384	735	343	446	789
July	339	344	683	337	453	790
August	342	360	702	355	482	837
September	356	419	775	371	496	867
October	364	471	835	390	577	967
November	372	497	869	392	601	993
December	358	468	826	394	590	984

COOKING AND HEATING APPARATUS.

(24 establishments.)

January	1,131	6	1,137	1,141	3	1,144
February	1,241	10	1,251	1,187	3	1,190
March	1,240	10	1,250	1,227	3	1,230
April	1,187	8	1,195	1,289	3	1,292
May	1,336	8	1,344	1,288	3	1,291
June	1,283	6	1,289	1,307	3	1,310
July	1,131	6	1,137	1,342	3	1,345
August	1,162	6	1,168	1,415	3	1,418
September	1,214	6	1,220	1,411	3	1,414
October	1,307	6	1,313	1,436	3	1,439
November	1,352	6	1,358	1,398	3	1,391
December	1,295	6	1,301	1,395	3	1,398

COOPERAGE.

(21 establishments.)

January	594	.....	594	692	.....	692
February	650	.....	650	706	.....	706
March	668	.....	668	718	.....	718
April	673	.....	673	671	.....	671
May	687	.....	687	689	.....	689
June	690	.....	680	690	.....	690
July	674	.....	674	675	.....	675
August	568	.....	568	724	.....	724
September	543	.....	543	703	.....	703
October	581	.....	581	745	.....	745
November	591	591	722	722
December	613	613	694	694

MANUFACTURERS' RETURNS.

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TABLE XI.—Persons employed, by industries, by months, 1897-1898.

COTTON AND LINEN GOODS.

(5 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	202	301	503	180	270	450
February	197	294	491	178	269	447
March	197	296	493	183	270	453
April	235	346	581	183	263	446
May	238	344	582	185	268	453
June	195	293	488	180	271	451
July	112	162	274	178	272	450
August	183	271	454	183	267	450
September	195	284	479	181	269	450
October	195	281	476	178	273	451
November	195	285	480	177	271	448
December	179	266	445	178	275	453

ELECTRICAL AND GAS APPARATUS AND SUPPLIES.

(21 establishments.)

January	978	40	1,018	1,001	59	1,060
February	983	50	1,033	985	59	1,044
March	1,034	48	1,082	1,053	63	1,116
April	1,028	52	1,080	1,087	80	1,167
May	1,023	51	1,074	1,108	77	1,185
June	1,026	49	1,075	1,082	66	1,148
July	1,014	39	1,053	1,056	65	1,121
August	964	34	998	1,058	62	1,120
September	968	42	1,010	1,061	63	1,124
October	963	41	1,024	1,064	59	1,117
November	979	41	1,020	1,067	62	1,119
December	1,025	49	1,074	1,064	62	1,126

ELECTRICAL AND GAS LIGHTING POWER AND STREET RAILWAYS.

(49 establishments.)

January	1,776	5	1,781	1,720	4	1,724
February	1,759	5	1,764	1,802	4	1,806
March	1,784	5	1,789	1,864	4	1,868
April	1,865	5	1,870	1,968	4	1,962
May	1,993	5	1,998	2,064	4	2,068
June	2,024	5	2,029	2,093	4	2,097
July	2,031	5	2,036	2,046	6	2,052
August	1,998	5	2,003	2,051	6	2,057
September	1,989	5	2,004	1,989	6	1,995
October	2,065	5	2,060	1,993	6	1,999
November	1,910	5	1,915	2,042	6	2,048
December	1,850	5	1,855	1,970	6	1,976

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

FANCY ARTICLES.

(8 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	75	12	87	107	41	148
February	82	13	95	113	41	154
March	84	13	96	119	42	161
April	88	11	99	137	44	181
May	97	13	110	139	46	185
June	107	18	125	135	50	185
July	108	16	124	134	41	175
August	118	24	142	135	49	178
September	126	28	154	143	51	194
October	130	28	158	151	57	208
November	128	40	168	148	54	202
December	139	38	177	155	59	214

FLOUR AND FEED.

(86 establishments.)

January	1,103	5	1,108	1,127	10	1,137
February	1,109	5	1,114	1,130	10	1,140
March	1,105	5	1,110	1,124	5	1,129
April	1,125	5	1,130	1,078	4	1,082
May	1,122	5	1,127	1,122	5	1,127
June	1,135	6	1,139	1,086	4	1,090
July	1,135	6	1,141	1,085	4	1,089
August	1,125	6	1,131	1,141	5	1,146
September	1,123	6	1,129	1,146	7	1,153
October	1,160	6	1,166	1,185	12	1,197
November	1,165	6	1,171	1,189	11	1,200
December	1,118	6	1,124	1,153	11	1,164

FOOD PREPARATIONS.

(31 establishments.)

January	1,710	111	1,821	2,068	72	2,160
February	1,613	122	1,735	1,694	89	1,783
March	1,500	127	1,627	1,605	90	1,695
April	1,387	130	1,517	1,563	70	1,633
May	1,419	131	1,550	1,801	97	1,898
June	1,452	141	1,593	2,538	559	3,097
July	2,269	892	3,161	3,710	1,437	5,147
August	2,392	1,215	3,607	3,585	1,431	5,016
September	2,000	945	2,945	2,229	574	2,803
October	1,836	376	2,212	1,597	105	1,692
November	1,646	137	1,783	1,823	126	1,949
December	1,742	121	1,863	2,254	128	2,382

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

FURNITURE.

(42 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	2,176	29	2,205	2,458	39	2,497
February	2,305	29	2,334	2,639	32	2,671
March	2,514	34	2,548	2,785	34	2,819
April	2,599	36	2,635	2,862	36	2,898
May	2,470	36	2,506	2,864	30	2,894
June	2,328	34	2,362	2,621	32	2,653
July	2,032	29	2,061	2,417	37	2,454
August	2,239	30	2,269	2,520	37	2,557
September	2,306	38	2,344	2,592	35	2,627
October	2,551	39	2,590	2,669	34	2,703
November	2,615	36	2,651	2,654	47	2,701
December	2,567	31	2,598	2,645	50	2,695

FURS, GLOVES AND MITTENS.

(11 establishments.)

January	105	122	227	111	154	265
February	104	122	226	113	163	276
March	106	133	239	111	170	281
April	112	159	271	118	190	308
May	114	183	297	124	214	332
June	116	192	308	121	221	342
July	118	200	318	126	230	356
August	117	210	327	127	231	358
September	116	214	330	131	239	370
October	112	216	328	125	249	374
November	110	170	280	123	217	340
December	110	162	262	123	200	323

GRAIN AND WAREHOUSE MEN.

(12 establishments.)

January	151	151	153	158
February	163	163	150	150
March	162	162	150	150
April	155	155	150	150
May	172	172	170	170
June	166	166	147	147
July	154	154	131	131
August	171	171	154	154
September	219	219	276	276
October	223	223	293	293
November	259	259	262	262
December	179	179	217	217

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

IRON GOODS (MALLEABLE).

(25 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	2,791	15	2,806	3,950	25	3,975
February	3,357	8	3,365	3,925	31	3,956
March	3,309	10	3,319	4,135	31	4,165
April	3,191	11	3,202	4,332	34	4,366
May	3,060	12	3,072	4,512	34	4,546
June	3,342	12	3,354	4,179	36	4,215
July	2,579	15	2,594	4,359	36	4,395
August	3,233	23	3,256	4,588	39	4,627
September	3,655	23	3,678	4,705	46	4,751
October	4,064	23	4,077	4,998	43	5,041
November	3,867	27	3,884	4,759	39	4,798
December	3,572	19	3,591	4,817	39	4,856

IRON (PIG).

(2 establishments.)

January	179	.....	179	199	.....	199
February	188	.....	188	177	.....	177
March	180	.....	180	198	.....	198
April	89	.....	89	224	.....	224
May	93	.....	93	216	.....	216
June	113	.....	113	203	.....	203
July	92	.....	92	191	.....	191
August	121	.....	121	208	.....	208
September	140	.....	140	215	.....	215
October	158	.....	158	206	.....	206
November	160	.....	160	200	.....	200
December	212	.....	212	200	.....	200

KNIT GOODS.

(15 establishments.)

January	300	1,066	1,366	430	1,489	1,919
February	301	1,170	1,471	431	1,437	1,868
March	316	1,277	1,593	453	1,456	1,898
April	323	1,362	1,685	448	1,528	1,976
May	331	1,443	1,774	448	1,558	2,006
June	329	1,490	1,819	453	1,578	2,031
July	346	1,552	1,898	462	1,571	2,033
August	344	1,590	1,934	458	1,539	2,047
September	345	1,569	1,914	467	1,588	2,045
October	344	1,544	1,888	454	1,579	2,033
November	340	1,523	1,868	446	1,555	2,001
December	334	1,472	1,806	437	1,539	1,976

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

LAGER BEER.

(71 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	2,796	219	3,015	2,581	316	2,897
February	2,775	209	2,984	2,551	323	2,874
March	2,794	219	3,013	2,577	352	2,929
April	2,588	234	3,072	2,604	336	2,990
May	2,876	269	3,145	2,664	320	2,984
June	2,886	269	3,155	2,693	499	3,192
July	2,960	270	3,230	2,704	462	3,166
August	2,885	270	3,155	2,701	469	3,160
September	2,856	265	3,121	3,675	455	4,130
October	2,843	255	3,098	2,716	480	3,196
November	2,844	219	3,063	2,662	424	3,086
December	3,033	214	3,247	2,602	399	3,001

LAUNDRIES.

(75 establishments.)

January	179	524	703	220	481	701
February	179	521	700	220	490	700
March	189	535	724	222	488	710
April	192	558	750	238	546	782
May	196	587	783	245	585	830
June	202	613	815	240	639	879
July	206	650	855	255	678	933
August	207	657	864	242	649	891
September	211	629	840	242	623	865
October	209	596	805	255	558	813
November	207	577	784	236	548	784
December	203	570	773	223	522	745

LEATHER.

(33 establishments.)

January	3,936	265	4,201	4,287	316	4,603
February	4,072	267	4,339	4,302	318	4,620
March	4,119	267	4,386	4,303	318	4,621
April	4,156	269	4,425	4,320	320	4,640
May	4,768	278	5,046	3,904	320	4,224
June	4,937	275	5,212	4,217	317	4,534
July	5,065	274	5,329	4,317	316	4,633
August	4,487	275	4,762	4,515	317	4,832
September	4,556	276	4,831	4,474	318	4,792
October	4,676	281	4,967	4,430	323	4,753
November	4,596	281	4,877	4,400	323	4,723
December	4,400	280	4,680	4,417	322	4,739

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

LITHOGRAPHING AND ENGRAVING.

(7 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	402	29	431	375	60	435
February	401	30	431	368	65	433
March	405	32	437	361	73	434
April	410	32	442	384	56	440
May	410	32	442	358	70	428
June	410	31	441	368	80	448
July	406	34	439	345	32	437
August	409	35	444	346	67	413
September	410	32	442	389	47	436
October	418	31	449	372	73	445
November	412	33	445	353	56	409
December	406	35	440	393	53	446

LUMBER, LATH AND SHINGLES.

(168 establishments.)

January	5,167	28	5,195	6,490	23	6,513
February	5,825	28	5,853	7,240	24	7,264
March	6,861	33	6,894	8,721	34	8,755
April	12,583	67	12,650	14,369	89	14,458
May	15,820	74	15,894	17,048	121	17,169
June	16,686	87	16,773	17,436	126	17,562
July	16,280	99	16,379	16,919	111	17,030
August	15,933	99	16,032	15,968	93	16,061
September	15,514	82	15,596	14,951	72	15,023
October	14,237	80	14,317	13,649	42	13,691
November	10,331	54	10,385	11,316	38	11,354
December	5,927	29	5,956	6,925	23	6,948

MALT.

(20 establishments.)

January	567	.....	567	542	1	543
February	578	.....	578	544	1	545
March	560	.....	560	547	1	548
April	562	.....	562	544	1	545
May	566	.....	566	519	1	520
June	513	.....	513	470	1	471
July	367	.....	367	436	1	437
August	363	.....	363	427	1	428
September	423	.....	423	501	1	502
October	542	.....	542	546	2	548
November	574	.....	574	547	2	549
December	567	.....	567	547	2	549

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

MACHINES AND MACHINERY.

(86 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	4,184	17	4,201	4,753	17	4,770
February	4,320	18	4,338	4,818	17	4,835
March	4,453	17	4,470	5,020	17	5,037
April	4,486	17	4,503	5,204	17	5,221
May	4,438	18	4,456	5,150	17	5,167
June	4,464	18	4,482	5,065	17	5,102
July	4,613	19	4,632	5,205	18	5,223
August	4,661	19	4,680	5,272	18	5,290
September	4,688	18	4,706	5,345	18	5,363
October	4,535	18	4,553	5,336	18	5,354
November	4,434	17	4,451	5,257	18	5,275
December	4,346	17	4,363	5,249	18	5,267

MIXED TEXTILES.

(9 establishments.)

January	146	183	329	145	256	401
February	142	175	317	148	266	414
March	146	177	323	163	303	466
April	155	208	363	191	299	490
May	158	216	374	174	307	481
June	159	217	376	181	325	506
July	152	174	326	181	315	496
August	153	174	327	164	268	432
September	159	202	361	148	223	381
October	164	208	372	159	257	416
November	162	199	361	159	300	459
December	153	191	344	158	316	474

OFFICE AND SALOON FIXTURES, ETC.

(15 establishments.)

January	449	.....	449	557	.....	557
February	435	.....	435	560	.....	560
March	422	.....	422	574	.....	574
April	496	.....	496	621	.....	621
May	540	.....	540	646	.....	646
June	578	.....	578	666	.....	666
July	584	.....	584	697	.....	697
August	617	.....	617	723	.....	723
September	623	.....	623	712	.....	712
October	642	.....	642	706	.....	706
November	680	.....	680	722	.....	722
December	626	.....	626	707	.....	707

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

PAINTS, OILS AND CRUDE CHEMICALS.

(7 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	142	1	143	113	7	120
February	142	1	143	112	7	119
March	142	1	143	112	7	119
April	145	1	146	97	7	104
May	145	1	146	99	7	106
June	129	1	130	99	7	106
July	129	1	130	99	7	106
August	125	1	126	95	7	102
September	143	1	144	114	7	121
October	140	1	141	110	7	117
November	140	1	141	110	7	117
December	133	1	134	108	7	115

PAPER AND PULP.

(34 establishments.)

January	2,430	620	3,050	2,881	744	3,575
February	2,452	624	3,076	2,783	763	3,546
March	2,646	628	3,274	2,817	790	3,607
April	2,589	633	3,222	2,862	792	3,654
May	2,623	636	3,264	2,914	769	3,683
June	2,549	621	3,170	2,856	749	3,605
July	2,426	637	3,063	2,731	735	3,466
August	2,289	604	2,893	2,528	708	3,236
September	2,401	603	3,004	2,587	714	3,301
October	2,615	629	3,244	2,679	771	3,450
November	2,646	665	3,311	2,773	779	3,552
December	2,602	647	3,249	2,780	781	3,561

PRINTERS' SUPPLIES.

(4 establishments.)

January	184	6	190	192	6	198
February	185	6	191	204	6	210
March	189	10	199	210	6	216
April	189	6	195	213	6	224
May	183	6	189	225	6	231
June	183	6	189	227	6	233
July	183	6	189	235	6	241
August	183	6	189	237	6	243
September	183	6	189	234	6	240
October	181	6	187	228	6	234
November	182	6	188	225	6	231
December	182	6	188	223	6	229

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

RAILWAY EQUIPMENT.

(20 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	9,597	5	9,602	10,398	7	10,405
February	9,339	5	9,344	10,443	7	10,450
March	9,557	5	9,562	10,496	6	10,492
April	9,616	5	9,621	10,617	6	10,623
May	9,544	5	9,549	10,710	6	10,716
June	9,478	5	9,483	10,893	7	10,900
July	9,590	5	9,595	10,774	7	10,781
August	9,762	5	9,767	10,923	7	10,930
September	10,119	5	10,124	10,994	7	11,001
October	10,108	5	10,111	10,965	7	10,972
November	10,103	5	10,108	10,972	7	10,979
December	10,040	5	10,045	11,022	7	11,029

SADDLERY, HARNESS, ETC.

(9 establishments.)

January	155	39	194	172	55	227
February	163	30	193	172	64	236
March	184	45	229	176	68	244
April	194	47	241	181	51	232
May	194	38	232	183	41	224
June	180	32	212	189	38	227
July	184	35	219	185	37	222
August	185	25	210	176	16	192
September	192	9	201	185	12	197
October	199	20	219	126	18	144
November	189	21	210	124	32	156
December	186	32	218	132	38	170

SASH, DOORS, BLINDS, ETC.

(73 establishments.)

January	3,496	38	3,534	2,909	30	2,939
February	2,748	40	2,788	3,119	33	3,152
March	2,979	40	3,019	3,332	33	3,365
April	3,519	44	3,563	3,608	37	3,645
May	3,643	43	3,686	3,558	35	3,593
June	3,840	44	3,884	2,905	10	2,915
July	3,856	46	3,902	2,870	2	2,872
August	3,638	45	3,683	3,494	16	3,510
September	3,614	40	3,654	3,809	24	3,833
October	3,559	39	3,598	3,697	28	3,725
November	3,471	38	3,509	3,652	25	3,677
December	3,236	38	3,274	3,327	24	3,351

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

SHEET METAL GOODS.

(26 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female	Total.	Male.	Female.	Total.
January	1,492	341	1,833	1,543	375	1,918
February	1,577	359	1,936	1,533	351	1,884
March	1,584	353	1,937	1,624	351	1,975
April	1,626	356	1,982	1,779	383	2,162
May	1,669	358	2,027	1,803	388	2,191
June	1,779	356	2,135	1,780	378	2,158
July	1,688	353	2,041	1,858	390	2,248
August	1,755	361	2,116	1,867	386	2,253
September	1,794	372	2,166	1,948	395	2,343
October	1,799	373	2,172	1,942	376	2,318
November	1,740	377	2,117	1,825	374	2,199
December	1,670	368	2,038	1,629	352	1,981

SHIP AND BOAT BUILDING.

(6 establishments.)

January	845	1	846	985	.....	985
February	804	1	805	957	.....	957
March	863	1	864	1,124	.....	1,124
April	937	2	939	1,234	1	1,235
May	790	3	793	1,034	2	1,036
June	394	1	396	1,084	1	1,085
July	363	2	365	946	1	947
August	431	3	434	771	2	773
September	308	2	310	548	1	549
October	442	1	443	637	.....	637
November	431	.....	431	743	.....	743
December	837	.....	837	772	.....	772

SOAP, LYE AND POTASH.

(9 establishments.)

January	106	46	152	115	70	185
February	108	45	153	115	69	184
March	112	47	159	114	68	182
April	120	49	169	116	70	186
May	118	48	166	115	70	185
June	112	54	166	115	66	181
July	114	54	168	113	69	182
August	121	51	172	114	72	186
September	122	48	170	115	70	185
October	124	49	173	116	71	187
November	120	47	167	114	70	184
December	117	46	163	115	66	181

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

STAVES AND HEADING.

(21 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	545	.....	545	451	.....	451
February	629	.....	629	559	.....	559
March	684	.....	684	547	.....	547
April	695	.....	695	535	.....	535
May	598	.....	598	552	.....	552
June	535	.....	535	539	.....	539
July	461	.....	461	468	.....	468
August	428	.....	428	408	.....	408
September	407	.....	407	397	.....	397
October	375	.....	375	371	.....	371
November	426	.....	426	378	.....	378
December	474	.....	474	355	.....	355

STONE (MARBLE, GRANITE, ETC.).

(10 establishments.)

January	116	.....	116	131	.....	131
February	121	.....	121	127	.....	127
March	132	.....	132	140	.....	140
April	175	.....	175	158	.....	158
May	194	.....	194	169	.....	169
June	210	.....	210	146	.....	146
July	241	.....	241	144	.....	144
August	229	.....	229	145	.....	145
September	223	.....	223	170	.....	170
October	195	.....	195	153	.....	153
November	194	.....	194	151	.....	151
December	158	.....	158	106	.....	105

STRAW GOODS.

(5 establishments.)

January	242	319	561	326	412	738
February	255	321	576	345	490	835
March	300	466	766	365	630	995
April	312	462	774	376	639	1,015
May	331	486	817	336	572	908
June	261	227	488	271	269	540
July	227	116	343	282	178	460
August	237	122	359	282	208	490
September	271	146	417	252	207	459
October	297	163	460	346	228	574
November	308	222	530	347	256	603
December	290	286	576	286	334	640

TABLE XI.—Persons employed, by industries, by months, 1897-1898.

TOYS AND GAMES.

(5 establishments.)

MONTHS.	1897			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	172	14	186	210	17	227
February	182	18	200	230	24	254
March	176	16	192	263	24	287
April	175	11	186	266	22	288
May	181	10	191	264	15	279
June	208	15	223	267	21	288
July	220	17	237	283	30	313
August	257	29	286	321	30	351
September	277	33	310	346	31	377
October	286	47	333	356	39	396
November	307	47	354	379	45	424
December	301	36	337	332	31	363

TRUNKS, VALISES, ETC.

(9 establishments.)

January	581	50	631	560	78	638
February	592	51	643	558	78	636
March	574	48	622	566	81	647
April	567	50	617	573	84	657
May	591	56	647	558	81	639
June	600	57	657	552	73	625
July	616	63	679	562	75	637
August	638	64	702	592	84	676
September	636	67	703	590	86	676
October	619	62	681	577	86	663
November	468	46	514	542	97	639
December	472	49	521	544	108	647

VENEER.

(9 establishments.)

January	331	.....	331	419	.....	419
February	359	.....	359	435	.....	435
March	368	.....	368	388	.....	388
April	381	.....	381	464	.....	464
May	374	.....	374	523	.....	523
June	378	.....	378	534	.....	534
July	426	.....	426	487	.....	487
August	494	.....	494	450	.....	450
September	425	.....	425	452	.....	452
October	389	.....	389	450	.....	450
November	344	.....	344	372	.....	372
December	351	.....	351	369	.....	369

TABLE XI.—*Persons employed, by industries, by months, 1897-1898.*

WAGONS, CARRIAGES AND SLEIGHS.

(53 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female	Total.	Male	Female	Total
January	2,156	42	2,198	2,204	40	2,244
February	2,161	42	2,193	2,420	43	2,463
March	2,234	42	2,276	2,533	43	2,576
April	2,311	44	2,355	2,577	44	2,621
May	2,423	44	2,467	2,713	45	2,758
June	2,455	45	2,500	2,749	44	2,793
July	2,545	43	2,588	2,679	43	2,722
August	2,407	35	2,442	2,651	36	2,687
September	2,322	32	2,354	2,567	36	2,603
October	2,264	30	2,294	2,489	33	2,522
November	2,320	32	2,352	2,572	38	2,610
December	2,395	37	2,432	2,429	41	2,470

WOODENWARE.

(11 establishments.)

January	1,172	.....	1,172	1,280	.....	1,280
February	1,273	.....	1,273	1,267	.....	1,267
March	1,413	.....	1,413	1,390	.....	1,390
April	1,365	.....	1,365	1,430	.....	1,430
May	1,369	.....	1,369	1,433	.....	1,433
June	1,379	.....	1,379	1,491	.....	1,491
July	1,330	.....	1,330	1,516	.....	1,516
August	1,314	.....	1,314	1,515	.....	1,515
September	1,272	.....	1,272	1,495	.....	1,495
October	1,257	1	1,258	1,466	.....	1,466
November	1,377	1	1,378	1,489	.....	1,489
December	1,367	1	1,368	1,499	.....	1,499

WOOLEN AND WORSTED GOODS.

(17 establishments.)

January	364	543	907	427	538	965
February	396	567	963	454	595	1,049
March	441	625	1,066	478	628	1,106
April	464	641	1,105	492	656	1,148
May	488	647	1,135	458	647	1,105
June	493	652	1,145	413	586	999
July	497	659	1,156	462	617	1,079
August	462	608	1,070	416	545	961
September	430	553	983	435	562	997
October	417	546	963	424	561	985
November	439	572	1,011	402	522	924
December	448	628	1,076	388	535	923

TABLE XI.—*Persons employed, by industries, by months, 1897-1898.*

MISCELLANEOUS.

(13 establishments.)

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	210	168	378	494	15	509
February	207	171	378	489	16	505
March	209	173	382	492	19	511
April	210	176	386	494	19	513
May	210	175	385	499	18	517
June	211	173	384	509	18	527
July	209	170	379	212	18	230
August	203	174	377	223	19	242
September	204	177	381	518	20	538
October	204	177	381	513	20	533
November	201	175	376	506	16	522
December	203	170	373	494	14	508

TABLE XII.— *Wages paid by industries, 1897-98.*

By "wages paid" is meant the aggregate amount paid as wages in each industry for 1897 and 1898 by the 1,499 establishments considered. Comparison between the two years is made and the increase or decrease for 1898 as compared with 1897 noted in amount and percentage. Wage earners only are considered; officers, clerks and other salaried persons are not included.

INDUSTRIES.	No. of establishments.	TOTAL AMOUNT OF WAGES PAID DURING YEARS		INCREASE (+) OR DECREASE (—) IN 1898.		
		1897.	1898.	Amount.	Per cent.	
Agricultural implements.....	31	\$938,930	\$1,282,127	+	\$343,197	+ 36.55
Artisans' tools & hardware specialties.....	10	182,601	247,067	+	64,466	+ 35.30
Beverages (not spirituous, soft drinks)	18	93,072	106,355	+	13,281	+ 14.21
Bicycles, tricycles, etc.....	7	325,604	335,065	+	9,466	+ 2.90
Boots and shoes.....	24	689,972	736,407	+	46,435	+ 7.19
Boxes (wooden and paper).....	29	404,765	429,838	+	25,074	+ 6.19
Brick, tile and sewer pipe.....	23	79,627	92,871	+	13,244	+ 16.63
Brooms, brushes and baskets.....	19	62,381	59,841	—	2,543	— 4.07
Barial cases, caskets and coffins.....	4	108,629	108,278	—	356	— 0.32
Cement, lime, plaster, etc.....	12	147,190	170,450	+	23,260	+ 15.80
Chairs.....	13	892,390	1,020,39	+	128,039	+ 14.34
Chemical preparations.....	13	104,211	84,018	—	16,193	— 16.15
Cigars, snuff and tobacco.....	54	441,261	437,419	—	3,84	— 0.87
Clothing.....	25	532,232	612,331	+	80,096	+ 15.04
Coal and wood.....	28	879,412	926,938	+	47,521	+ 5.40
Confectioneries, crackers, etc.....	12	262,890	269,928	+	4,048	+ 1.54
Cooking and heating apparatus.....	24	458,670	607,124	+	148,454	+ 32.36
Cooperage.....	21	213,079	242,522	+	29,443	+ 13.81
Cotton and linen goods.....	5	117,219	104,297	—	12,922	— 11.02
Electrical & gas apparatus & supplies	21	497,164	523,357	+	26,193	+ 5.26
Electric and gas lighting power and street railways.....	49	1,220,541	1,247,837	+	27,296	+ 2.23
Fancy articles.....	8	41,575	62,438	+	20,918	+ 50.31
Flour and feed.....	86	586,731	606,261	+	19,530	+ 3.32
Food preparations.....	31	848,879	1,040,852	+	191,973	+ 22.73
Furniture.....	42	727,752	823,267	+	95,515	+ 13.12
Furs, gloves and mittens.....	11	91,034	115,104	+	27,075	+ 29.74
Grain and warehouse men.....	12	105,410	111,854	+	6,044	+ 5.71
Iron goods (malleable).....	25	1,518,760	1,942,451	+	423,691	+ 27.89
Iron (pig).....	2	52,807	90,847	+	38,041	+ 72.03
Knit goods.....	15	369,430	429,911	+	60,482	+ 16.38
Lager beer.....	71	1,686,468	1,637,511	—	48,957	— 2.90
Laundries.....	75	231,775	249,927	+	18,152	+ 7.83
Leather.....	33	2,028,342	2,054,927	+	26,585	+ 1.31
Lithographing and engraving.....	7	222,156	223,111	+	955	+ 0.42
Lumber, lath and shingles.....	168	4,566,264	5,202,235	+	635,971	+ 13.92
Malt.....	20	296,437	308,285	+	11,848	+ 4.00
Machines and machinery.....	86	2,343,671	2,773,393	+	429,722	+ 18.33
Mixed textiles.....	9	77,205	111,856	+	34,651	+ 44.88
Office and saloon fixtures, etc.....	15	229,011	264,261	+	35,250	+ 15.39
Paints, oils and crude chemicals.....	7	80,128	60,217	—	19,911	— 24.84
Paper and pulp.....	34	1,240,476	1,285,931	+	45,455	+ 3.66
Printers' supplies.....	4	71,751	87,765	+	16,014	+ 22.31
Railway equipment.....	20	5,604,239	5,672,53	+	68,292	+ 1.23
Saddle y, harness, etc.....	9	62,136	91,358	+	29,222	+ 47.19
Sash, doors, blinds, etc.....	73	1,159,449	1,202,110	+	42,661	+ 3.67
Sheet metal goods.....	28	621,091	626,584	+	5,493	+ 0.88
Ship and boat building.....	6	262,606	387,457	+	124,852	+ 47.54
Soap, lye, potash, etc.....	9	71,700	79,237	+	7,537	+ 10.51
Staves and heading.....	21	156,892	159,645	+	2,753	+ 1.76
Stone (marble, granite, etc.).....	10	85,736	75,501	—	10,235	— 11.93
Straw goods.....	5	191,874	256,720	+	64,846	+ 33.79
Toys and games.....	5	68,676	83,492	+	14,816	+ 21.57
Trunks and valises, etc.....	9	203,931	208,893	+	4,962	+ 2.43
Vanoeer.....	9	119,510	144,804	+	25,294	+ 21.16
Wagons, carriages and sleighs.....	53	851,241	1,110,035	+	258,794	+ 30.40
Woodenware.....	11	421,260	460,948	+	39,688	+ 9.42
Woolen and worsted goods.....	17	310,178	326,979	+	16,801	+ 5.41
Miscellaneous.....	13	133,209	213,194	+	79,985	+ 60.04
All industries.....	1,499	\$36,583,044	\$40,320,703	+	\$3,737,659	+ 10.21

TABLE XIII.—Average yearly earnings by industries, 1897-98.

The average yearly earnings in the different industries, as shown in the following table, have been obtained by dividing the total amount paid in wages in each industry by the average number of persons employed therein. Comparisons between the years are made and the increase or decrease for 1898 as compared with 1897 is noted by a amount and percentage. Wage earners only are considered; officers, clerks and other salaried persons are not included.

INDUSTRIES.	No. of establishments.	AVERAGE YEARLY EARNINGS.		INCREASE (+) OR DECREASE (—) IN 1897.	
		1897.	1898.	Amounts	Per cent.
Agricultural implements.....	31	\$503 14	\$522 48	+ \$19 30	+ 3 83
Artisans' tools and hardware specialties.....	10	412 20	359 68	- 52 57	- 12 55
Beverages (not spirituous, soft drinks).....	14	456 23	470 71	+ 14 48	+ 3 17
Bicycles, tricycles, etc.....	7	494 97	457 72	- 37 25	- 7 52
Boots and shoes.....	24	298 81	301 05	+ 2 24	+ 0 74
Boxes (wooden and paper).....	29	302 97	282 60	- 20 37	- 6 72
Brick, tile and sewer pipe.....	23	284 38	292 04	+ 7 66	+ 2 69
Brooms, brushes, and baskets.....	19	301 87	363 61	+ 61 74	+ 20 45
Burial cases, caskets, coffins, etc.....	4	350 25	328 14	- 22 11	- 6 31
Cement, lime, plaster, etc.....	12	448 75	415 83	- 32 92	- 7 35
Chairs.....	13	288 70	292 79	+ 4 09	+ 1 41
Chemical preparations.....	13	686 38	627 00	- 59 38	- 8 65
Cigars, snuff and tobacco.....	54	462 05	434 81	- 27 24	- 5 89
Clothing.....	25	328 54	277 82	- 51 22	- 15 59
Coal and wood.....	28	499 95	501 85	+ 1 90	+ 0 38
Confectioneries, crackers, etc.....	12	358 16	323 16	- 35 00	- 9 77
Cooking and heating apparatus.....	24	367 82	459 59	+ 91 77	+ 24 94
Cooperage.....	21	339 84	345 47	+ 5 63	+ 1 65
Cotton and linen goods.....	5	244 71	231 77	- 12 94	- 5 28
Electrical and gas apparatus and supplies.....	21	475 75	467 28	- 8 47	- 1 78
Electric and gas lighting power and street railways.....	49	631 75	633 42	+ 1 67	+ 0 46
Fancy articles.....	8	324 90	343 36	+ 18 56	+ 5 71
Flour and feed.....	86	518 31	532 63	+ 14 32	+ 2 76
Food preparations.....	31	424 40	396 55	- 27 85	- 6 55
Furniture.....	42	298 14	307 07	+ 8 93	+ 2 99
Furs, gloves and mittens.....	11	320 54	361 18	+ 40 64	+ 12 67
Grain and warehouse men.....	12	554 58	595 00	+ 40 42	+ 7 28
Iron goods (malleable).....	25	453 36	434 15	- 19 21	- 4 23
Iron (pig).....	2	366 72	449 74	+ 83 02	+ 22 69
Knit goods.....	15	223 11	214 58	- 8 53	- 3 85
Lager beer.....	71	542 62	536 88	- 5 74	- 1 05
Laundries.....	75	296 01	311 62	+ 15 61	+ 5 26
Leather.....	33	426 66	442 58	+ 15 92	+ 3 73
Lithographing and engraving.....	7	504 90	514 08	+ 9 18	+ 1 81
Lumber, lath and shingles.....	168	386 09	411 21	+ 25 12	+ 6 50
Malt.....	20	576 71	596 63	+ 21 92	+ 3 80
Machines and machinery.....	86	522 44	537 56	+ 15 14	+ 2 89
Mixed textiles.....	9	221 85	248 01	+ 26 16	+ 11 79
Office and saloon fixtures, etc.....	15	410 41	401 61	- 8 81	- 2 14
Paints, oils and crude chemicals.....	7	578 46	545 58	- 32 88	- 5 68
Paper and pulp.....	34	383 71	392 94	+ 9 23	+ 2 39
Printers' supplies.....	4	377 64	396 63	+ 18 99	+ 5 03
Railway equipment.....	20	564 11	526 55	- 37 56	- 6 65
Saddlery, harness, etc.....	9	382 03	413 48	+ 31 45	+ 8 23
Sash, doors, blinds, etc.....	73	330 61	335 54	+ 4 93	+ 1 49
Sheet metal goods.....	26	304 15	293 48	- 10 67	- 3 50
Ship and boat building.....	6	4 22 19	429 07	+ 6 85	+ 1 62
Soap, lye, potash, etc.....	9	4 22 64	436 07	+ 3 85	+ 0 91
Staves and heading.....	21	301 06	300 96	- 0 10	- 0 03
Stone (marble, granite, etc.).....	10	469 19	520 69	+ 51 50	+ 13 14
Straw goods.....	5	345 72	373 14	+ 27 42	+ 7 93
Toys and games.....	5	271 44	260 91	- 10 53	- 3 87
Trunks, valises, etc.....	9	321 15	323 36	+ 2 21	+ 0 68
Veneer.....	9	310 42	325 40	+ 14 98	+ 4 82
Wagons, carriages and sleighs.....	53	401 37	428 75	+ 27 38	+ 6 82
Woodenware.....	11	318 17	319 83	+ 1 66	+ 0 52
Woolen and worsted goods.....	17	296 97	320 56	+ 23 59	+ 8 30
Miscellaneous.....	13	350 55	452 64	+ 102 09	+ 29 12
All industries.....	1,499	\$416 79	\$418 92	+ 2 13	+ 0 51

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

In this table is shown for 1897 and 1898 a classification by sex and age of the weekly earnings, ranging from \$25.00 per week and over to \$1.50 per week. The returns cover, in most cases the week in which the greatest number of persons were employed. These figures represent wage earners only; officers, clerks and other salaried persons are not included.

AGRICULTURAL IMPLEMENTS.

(31 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over	16				17			
20.00 but under \$25.00..	17				29			
15.00 but under 20.00..	32				47			
10.00 but under 15.00..	98				170			
13.00 but under 15.00..	189				213			
12.00 but under 13.00..	225				383			
11.00 but under 12.00..	147				82			
10.00 but under 11.00..	142				335			
9.00 but under 10.00..	417				456			
8.00 but under 9.00..	195				273			
7.00 but under 8.00..	303				534			
6.00 but under 7.00..	161	1	62		160			
5.50 but under 6.00..	10		3				21	
5.00 but under 5.50..	9		14		53		7	
4.50 but under 5.00..	32		34		24		7	
4.00 but under 4.50..	1		14		27		26	
3.50 but under 4.00..							25	
3.00 but under 3.50..	1		19				30	
2.50 but under 3.00..			3			4	44	
2.00 but under 2.50..			2				9	
1.50 but under 2.00..							4	
Under \$1.50.....								
Totals.....	2,078	1	171		2,803	4	173	

ARTISANS' TOOLS AND HARDWARE SPECIALTIES.

(10 establishments.)

\$25.00 per week and over				4			
20.00 but under 25.00..	3			6			
15.00 but under 20.00..	12			13			
10.00 but under 15.00..	55			78			
13.00 but under 15.00..	61			43			
12.00 but under 13.00..	81			34			
11.00 but under 12.00..	12			14			
10.00 but under 11.00..	36			35			
9.00 but under 10.00..	36			65			
8.00 but under 9.00..	13			31			
7.00 but under 8.00..	70			166			
6.00 but under 7.00..	136			171			
5.50 but under 6.00..	1	9		12			
5.00 but under 5.50..	10	27		34		2	
4.50 but under 5.00..	3	40		53		2	
4.00 but under 4.50..		47				24	
3.50 but under 4.00..		24				38	
3.00 but under 3.50..		57				60	
2.50 but under 3.00..		40				24	
2.00 but under 2.50..		7				18	
1.50 but under 2.00..						13	
Under \$1.50.....							
Totals.....	482	255		761		181	

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

BEVERAGES (NOT SPIRITUOUS SOFT DRINKS).

(18 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	1				1			
20.00 but under \$25.00	2				2			
18.00 but under 20.00	11				7			
15.00 but under 18.00	5				14			
13.00 but under 15.00	16				19			
12.00 but under 13.00	23				24			
11.00 but under 12.00	10				7			
10.00 but under 11.00	20				20			
9.00 but under 10.00	28				23			
8.00 but under 9.00	3	1			12	1		
7.00 but under 8.00	34				48			
6.00 but under 7.00	11				38	1		
5.50 but under 6.00						2		
5.00 but under 5.50	7				7		2	
4.50 but under 5.00	2	2	5			2	6	
4.00 but under 4.50			9	4			4	
3.50 but under 4.00	4		5			11	16	
3.00 but under 3.50			11		1	1	2	
2.50 but under 3.00			1					
2.00 but under 2.50			1					
1.50 but under 2.00			3					
Under \$1.50								
Totals	177	3	35	4	223	18	30	

BICYCLES, TRICYCLES, ETC.

(7 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	18				29			
20.00 but under 25.00	35				67			
18.00 but under 20.00	61				86			
15.00 but under 18.00	80				100			
13.00 but under 15.00	76				91			
12.00 but under 13.00	78				80			
11.00 but under 12.00	29				65			
10.00 but under 11.00	54				86			
9.00 but under 10.00	91				108			
8.00 but under 9.00	45				84			
7.00 but under 8.00	69		9		62		6	
6.00 but under 7.00	51		18		102		9	
5.50 but under 6.00	15		10		31		3	
5.00 but under 5.50	14		22		31		6	
4.50 but under 5.00	8		26		39		10	
4.00 but under 4.50	5		14				11	
3.50 but under 4.00		2	24				13	
3.00 but under 3.50			21				9	
2.50 but under 3.00			16	3			7	
2.00 but under 2.50			4	3			1	
1.50 but under 2.00							1	
Under \$1.50							1	
Totals	729	2	164	6	1,061		77	

TABLE XIV.—Classified weekly earnings by industries, 1897 and 1898.

BOOTS AND SHOES.

(24 establishments.)

CLASSIFICATION OF WEEKLY EARNINGS.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age	Females under 18 years of age	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	13				16			
20.00 but under \$25.00	34				38			
15.00 but under 20.00	29				41			
10.00 but under 15.00	79				94			
5.00 but under 10.00	55				56			
2.00 but under 5.00	80				84			
1.00 but under 2.00	74	30			66	26		
.50 but under 1.00	75	16			97	23		
.25 but under .50	170	20			186	22		
.10 but under .25	112	20			125	35		
.05 but under .10	111	30	5		125	46	8	2
.02 but under .05	111	82	8	2	106	85	5	
.01 but under .02	20	50	1		21	55		
Under .01	36	106		3	44	97		
	15	70	28	1	15	82	18	4
	20	47	49	9	22	48	46	12
	3	55	21	32	6	42	25	28
		32	411	49		23	431	51
		3	21	28		3	22	43
			41	59			25	61
				8			7	11
Under \$1.50								2
Totals	1,047	561	585	191	1,142	587	588	214

BOXES (WOODEN AND PAPER).

(29 establishments.)

CLASSIFICATION OF WEEKLY EARNINGS.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age	Females under 18 years of age	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	7				5			
20.00 but under \$25.00	3				6			
15.00 but under 20.00	13				10			
10.00 but under 15.00	18				26			
5.00 but under 10.00	26				19			
2.00 but under 5.00	41				48			
1.00 but under 2.00	29				39			
.50 but under 1.00	61	1			61	1		
.25 but under .50	114				114			
.10 but under .25	46	1			98	2		
.05 but under .10	140				95			
.02 but under .05	105	65	13		255	81	4	
.01 but under .02	41	11	8	3	53	36	4	
Under .01	25	32	16	3	38	14	5	
	37	36	7	4	43	37	22	5
	19	44	17	8	29	51	35	32
	9	43	14	20	22	54	20	20
	3	17	88	30	24	16	36	26
		25	80	47		16	56	47
		3	25	12			18	13
		6					7	21
Under \$1.50			1	1				
Totals	736	284	269	136	939	284	369	174

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

BRICK, TILE AND SEWER PIPE.

(23 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	.....	.....	.....	.....	1	.....	.....	.....
20.00 but under \$25.00	.....	.....	.....	.....	.....	.....	.....	.....
18.00 but under 20.00	1	.....	.....	.....	2	.....	.....	.....
15.00 but under 18.00	1	.....	.....	.....	2	.....	.....	.....
13.00 but under 15.00	3	.....	.....	.....	1	.....	.....	.....
12.00 but under 13.00	2	.....	.....	.....	4	.....	.....	.....
11.00 but under 12.00	1	.....	.....	.....	.....	.....	.....	.....
10.00 but under 11.00	5	.....	.....	.....	11	.....	.....	.....
9.00 but under 10.00	72	.....	.....	.....	81	.....	.....	.....
8.00 but under 9.00	124	.....	.....	.....	137	.....	.....	.....
7.00 but under 8.00	158	.....	.....	.....	234	.....	.....	.....
6.00 but under 7.00	182	.....	.....	.....	68	.....	5	.....
5.50 but under 6.00	8	.....	.....	.....	.....	.....	1	.....
5.00 but under 5.50	1	.....	.....	.....	.....	.....	5	.....
4.50 but under 5.00	1	.....	13	.....	12	.....	9	.....
4.00 but under 4.50	3	.....	.....	.....	.....	.....	.....	.....
3.50 but under 4.00	.....	.....	.....	.....	1	.....	3	.....
3.00 but under 3.50	8	.....	7	.....	.....	.....	29	.....
2.50 but under 3.00	.....	.....	5	.....	.....	.....	.....	.....
2.00 but under 2.50	.....	.....	8	.....	.....	.....	2	.....
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	570	.....	33	.....	554	.....	54	.....

BROOMS, BRUSHES, BASKETS, ETC.

(19 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	.....	.....	.....	.....	1	.....	.....	.....
20.00 but under \$25.00	.....	.....	.....	.....	.....	.....	.....	.....
18.00 but under 20.00	2	.....	.....	.....	1	.....	.....	.....
15.00 but under 18.00	1	.....	.....	.....	2	.....	.....	.....
13.00 but under 15.00	7	.....	.....	.....	9	.....	.....	.....
12.00 but under 13.00	9	.....	.....	.....	10	.....	.....	.....
11.00 but under 12.00	10	.....	.....	.....	13	.....	.....	.....
10.00 but under 11.00	10	.....	.....	.....	12	.....	.....	.....
9.00 but under 10.00	44	.....	.....	.....	36	.....	.....	.....
8.00 but under 9.00	23	.....	.....	.....	39	1	.....	.....
7.00 but under 8.00	39	.....	.....	.....	36	.....	12	.....
6.00 but under 7.00	31	2	2	.....	54	2	5	.....
5.50 but under 6.00	1	.....	.....	.....	.....	.....	4	.....
5.00 but under 5.50	13	.....	3	.....	16	.....	1	.....
4.50 but under 5.00	13	4	10	.....	14	3	2	.....
4.00 but under 4.50	2	.....	.....	.....	1	.....	6	.....
3.50 but under 4.00	.....	.....	6	.....	1	.....	10	.....
3.00 but under 3.50	.....	.....	12	.....	.....	.....	8	.....
2.50 but under 3.00	.....	.....	6	.....	.....	.....	18	.....
2.00 but under 2.50	.....	.....	16	.....	.....	.....	.....	1
1.50 but under 2.00	.....	.....	5	.....	.....	.....	.....	3
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	205	6	60	.....	245	6	66	4

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

BURIAL CASES, CASKETS, COFFINS, ETC.

(4 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	1				2			
20.00 but under \$25.00								
18.00 but under 20.00	2				1			
15.00 but under 18.00	5				4			
13.00 but under 15.00	5				9			
12.00 but under 13.00	13				14			
11.00 but under 12.00	3				5			
10.00 but under 11.00	16				10	1		
9.00 but under 10.00	11	1			67			
8.00 but under 9.00	31	1			25			
7.00 but under 8.00	45	2			59	1		
6.00 but under 7.00	57	4			31	4		
5.50 but under 6.00	43	7	5		1	7		
5.00 but under 5.50	4	4			8	3		
4.50 but under 5.00	2	1	4		3	6		
4.00 but under 4.50	4	7	1	1	1	9	1	
3.50 but under 4.00		2	1		9	3		
3.00 but under 3.50		20	2	9		25	13	
2.50 but under 3.00		6					7	6
2.00 but under 2.50							1	6
1.50 but under 2.00								
Under \$1.50								
Total	242	55	13	10	243	59	22	12

CEMENT, LIME, PLASTER, ETC.

(12 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	1				2			
20.00 but under \$25.00	1				1			
18.00 but under 20.00	1				4			
15.00 but under 18.00	3				7			
13.00 but under 15.00	10				10			
12.00 but under 13.00	14				4			
11.00 but under 12.00	3				13			
10.00 but under 11.00	10				9			
9.00 but under 10.00	58				118			
8.00 but under 9.00	43				90			
7.00 but under 8.00	224				189			
6.00 but under 7.00	56		5		14			
5.50 but under 6.00	1				44			
5.00 but under 5.50	2							
4.50 but under 5.00	4				20			
4.00 but under 4.50		1	2					
3.50 but under 4.00						1		
3.00 but under 3.50			4			1		1
2.50 but under 3.00			7				15	
2.00 but under 2.50		1					1	
1.50 but under 2.00								
Under \$1.50								
Totals	431	2	18		525	2	16	1

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

CHAIRS.

(13 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 14 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	9				7			
20.00 but under \$25.00	9				16			
18.00 but under 20.00	20				24			
15.00 but under 18.00	18				21			
13.00 but under 15.00	39				43			
12.00 but under 13.00	41				35			
11.00 but under 12.00	43				102			
10.00 but under 11.00	99				49	1		
9.00 but under 10.00	133	1			103			
8.00 but under 9.00	225				257			
7.00 but under 8.00	580	1	25		567			
6.00 but under 7.00	991	1			1,173	8	56	
5.50 but under 6.00	121	7	45		176	3	56	
5.00 but under 5.50	16	6	22	10	164	13	26	13
4.50 but under 5.00	112	35	63	1	27	28	84	12
4.00 but under 4.50	1	21	67		12	18	34	23
3.50 but under 4.00	2	49	99	23	1	59	94	36
3.00 but under 3.50	3	40	124	41	4	21	92	33
2.50 but under 3.00		2	69	29		2	86	25
2.00 but under 2.50			32	26			16	18
1.50 but under 2.00							5	5
Under \$1.50								
Totals	2,472	163	546	129	2,781	153	549	170

CHEMICAL PREPARATIONS.

(13 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 14 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	16				2			
\$20.00 but under \$25.00	5				4			
18.00 but under 20.00	16				6			
15.00 but under 18.00	5				9			
13.00 but under 15.00	15				11			
12.00 but under 13.00	6				8			
11.00 but under 12.00	2				9			
10.00 but under 11.00	11				23			
9.00 but under 10.00	7	2			16	1		
8.00 but under 9.00	5				6	2		
7.00 but under 8.00	3	1			11	7		
6.00 but under 7.00	10	4			1	2		
5.50 but under 6.00	6	2			3	4		
5.00 but under 5.50	3	7			2	6		
4.50 but under 5.00	2	9			2	2		
4.00 but under 4.50	3		2		1	4	1	
3.50 but under 4.00					2	3		
3.00 but under 3.50		3					3	
2.50 but under 3.00		1	2	2			1	5
2.00 but under 2.50				1				
1.50 but under 2.00						1		
Under \$1.50								
Totals	118	30	4	3	114	32	9	5

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

CIGARS, SNUFF AND TOBACCO.

(54 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	9				9			
20.00 but under \$25.00	7				9			
18.00 but under 20.00	8				13			
15.00 but under 18.00	51				44			
13.00 but under 15.00	48				59			
12.00 but under 13.00	63				57			
11.00 but under 12.00	64				75	12		
10.00 but under 11.00	69	5			51	6		
9.00 but under 10.00	38	11			102	11		
8.00 but under 9.00	53				72	20		
7.00 but under 8.00	54	23	6		32	27	25	6
6.00 but under 7.00	43	30	1	5	35	26	8	2
5.50 but under 6.00	5	3		5	3	16	3	4
5.00 but under 5.50	8	2		9	3	9	3	5
4.50 but under 5.00	8	4	6	3	3	12	6	5
4.00 but under 4.50	7	8	14	6	4	7	11	6
3.50 but under 4.00		7	3	6		9	4	11
3.00 but under 3.50	1	13	31	27		5	29	42
2.50 but under 3.00		18	24	49			24	77
2.00 but under 2.50			25	19		1	21	27
1.50 but under 2.00				28			8	8
Under \$1.50								
Totals	586	124	110	157	576	161	145	193

CLOTHING.

(25 establishments.)

\$25.00 per wk. & over	34				32			
20.00 but under \$25.00	14				21			
18.00 but under 20.00	35				28			
15.00 but under 18.00	32				24			
13.00 but under 15.00	27				10			
12.00 but under 13.00	35				26			
11.00 but under 12.00	12	31			6	22		
10.00 but under 11.00	28	16			32	16		
9.00 but under 10.00	31	12			49	21		
8.00 but under 9.00	19	72			13	95		
7.00 but under 8.00	29	87			8	56		
6.00 but under 7.00	17	123			11	150	10	
5.50 but under 6.00	8	131			2	280	2	
5.00 but under 5.50	8	117		1	11	509	1	
4.50 but under 5.00	4	137	2	1	2	191	3	
4.00 but under 4.50	2	107	3	5	2	178	2	
3.50 but under 4.00	1	237	2	13	3	312	7	28
3.00 but under 3.50	1	112	13	7	1	100	10	41
2.50 but under 3.00		35	10	28		28	12	31
2.00 but under 2.50		44	6	20		5	4	45
1.50 but under 2.00		29	1	15				33
Under \$1.50		1		17				7
Totals	328	1,291	37	107	291	1,964	51	192

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

COAL AND WOOD.

(28 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	79				80			
20.00 but under \$25.00	54				45			
18.00 but under 20.00	50				49			
15.00 but under 18.00	190				146			
13.00 but under 15.00	84				89			
12.00 but under 13.00	357				396			
11.00 but under 12.00	308				251			
10.00 but under 11.00	284				260			
9.00 but under 10.00	673				599			
8.00 but under 9.00	112				116			
7.00 but under 8.00	128				176			
6.00 but under 7.00	42				11		2	
5.50 but under 6.00	4	1			17			
5.00 but under 5.50	1				3			
4.50 but under 5.00	3	2			5		4	
4.00 but under 4.50	6				4			
3.50 but under 4.00	2		1				2	
3.00 but under 3.50	1		1				32	
2.50 but under 3.00							1	
2.00 but under 2.50						1		
1.50 but under 2.00			8				23	
Under \$1.50							2	
Totals	2,378	3	10		2,247	1	66	

CONFECTIONERIES, CRACKERS, ETC.

(12 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	8				4			
20.00 but under \$25.00	12				6			
18.00 but under 20.00	10				7			
15.00 but under 18.00	13				20			
13.00 but under 15.00	17				12			
12.00 but under 13.00	23				26			
11.00 but under 12.00	12				11			
10.00 but under 11.00	34				29			
9.00 but under 10.00	23				33			
8.00 but under 9.00	17				8			
7.00 but under 8.00	14	1			24	1		
6.00 but under 7.00	20	3			11	1		
5.50 but under 6.00	2	3			6	6		
5.00 but under 5.50	14	9	1		17	3	1	
4.50 but under 5.00	7	17			11	14	4	
4.00 but under 4.50	12	25	13	1	20	18	12	
3.50 but under 4.00	6	31	20	9	16	48	23	
3.00 but under 3.50	18	33	12	34	4	69	48	
2.50 but under 3.00		54	35	72		42	42	
2.00 but under 2.50		3	6	90		26	27	
1.50 but under 2.00			3	72		8	25	
Under \$1.50								
Totals	262	179	90	278	265	236	182	34

COOKING AND HEATING APPARATUS.

(24 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	8	.....	.....	.....	12	.....	.....	.....
20.00 but under \$25.00	9	.....	.....	.....	26	.....	.....	.....
15.00 but under 20.00	28	.....	.....	.....	38	.....	.....	.....
10.00 but under 15.00	103	.....	.....	.....	157	.....	.....	.....
13.00 but under 15.00	70	.....	.....	.....	113	.....	.....	.....
12.00 but under 13.00	90	.....	.....	.....	101	.....	.....	.....
11.00 but under 12.00	38	.....	.....	.....	35	.....	.....	.....
10.00 but under 11.00	82	.....	.....	.....	102	.....	.....	.....
9.00 but under 10.00	144	.....	.....	.....	203	.....	.....	.....
8.00 but under 9.00	133	.....	.....	.....	150	.....	.....	.....
7.00 but under 8.00	185	1	2	.....	122	3	.....	.....
6.00 but under 7.00	113	1	1	.....	73	.....	5	.....
5.50 but under 6.00	22	.....	.....	.....	10	.....	.....	.....
5.00 but under 5.50	25	.....	.....	.....	45	.....	2	.....
4.50 but under 5.00	22	.....	11	.....	4	.....	28	.....
4.00 but under 4.50	9	.....	26	.....	2	.....	22	.....
3.50 but under 4.00	7	5	18	.....	.....	.....	62	.....
3.00 but under 3.50	9	1	54	.....	.....	.....	44	.....
2.50 but under 3.00	.....	.....	81	.....	.....	.....	50	.....
2.00 but under 2.50	.....	.....	104	.....	.....	.....	51	.....
1.50 but under 2.00	.....	.....	3	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	1,097	8	200	.....	1,193	3	264	.....

COOPERAGE.

(21 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	3	.....	.....	.....	3	.....	.....	.....
20.00 but under \$25.00	8	.....	.....	.....	8	.....	.....	.....
15.00 but under 20.00	10	.....	.....	.....	11	.....	.....	.....
10.00 but under 15.00	29	.....	.....	.....	48	.....	.....	.....
13.00 but under 15.00	53	.....	.....	.....	55	.....	.....	.....
12.00 but under 13.00	36	.....	.....	.....	87	.....	.....	.....
11.00 but under 12.00	29	.....	.....	.....	28	.....	.....	.....
10.00 but under 11.00	88	.....	.....	.....	49	.....	.....	.....
9.00 but under 10.00	97	.....	.....	.....	160	.....	.....	.....
8.00 but under 9.00	63	.....	.....	.....	82	.....	.....	.....
7.00 but under 8.00	73	.....	.....	.....	72	.....	.....	.....
6.00 but under 7.00	77	.....	4	.....	75	.....	3	.....
5.50 but under 6.00	34	.....	.....	.....	14	.....	.....	.....
5.00 but under 5.50	11	.....	.....	.....	17	.....	.....	.....
4.50 but under 5.00	11	.....	23	.....	9	.....	2	.....
4.00 but under 4.50	10	.....	12	.....	8	.....	11	.....
3.50 but under 4.00	4	.....	18	.....	1	.....	14	.....
3.00 but under 3.50	1	.....	12	.....	4	.....	5	.....
2.50 but under 3.00	.....	.....	2	.....	.....	.....	6	.....
2.00 but under 2.50	.....	.....	.....	.....	.....	.....	6	.....
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	637	.....	71	.....	731	.....	62	.....

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

COTTON AND LINEN GOODS.

(5 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	5							
20.00 but under \$25.00	1				1			
18.00 but under 20.00	4				7			
15.00 but under 18.00	7				3			
13.00 but under 15.00	6				3			
12.00 but under 13.00	2	1			5	1		
11.00 but under 12.00	4				7			
10.00 but under 11.00	8				19			
9.00 but under 10.00	24	4			4	12		
8.00 but under 9.00	7	48			27	44		
7.00 but under 8.00	28	33			19	17		
6.00 but under 7.00	35	33			18		1	
5.50 but under 6.00	22	14	3		15	34		
5.00 but under 5.50	20	13	2	1	15		4	
4.50 but under 5.00	22	67	25	20	15	40	13	
4.00 but under 4.50	2	6	11	14	11	21	10	
3.50 but under 4.00	10	32	30	16		6	12	
3.00 but under 3.50			22	11			10	
2.50 but under 3.00							1	
2.00 but under 2.50								
1.50 but under 2.00		4		4				
Under \$1.50								
Totals	207	237	94	66	152	197	51	50

ELECTRICAL AND GAS APPARATUS AND SUPPLIES.

(21 establishments.)

\$25.00 per wk. & over	14				8			
20.00 but under \$25.00	23				21			
18.00 but under 20.00	33				38			
15.00 but under 18.00	67				79			
13.00 but under 15.00	85				92			
12.00 but under 13.00	101				117			
11.00 but under 12.00	66				50			
10.00 but under 11.00	94				95			
9.00 but under 10.00	175				196			
8.00 but under 9.00	53				52			
7.00 but under 8.00	92				94	7		
6.00 but under 7.00	38	7	1		83	2	5	
5.50 but under 6.00	11				26	1	2	
5.00 but under 5.50	28	3	10		31	10	13	
4.50 but under 5.00	11	52	11	5	21	10	8	
4.00 but under 4.50	13	7	16		15	15	27	
3.50 but under 4.00	5	3	29		10	9	16	
3.00 but under 3.50	5	2	35		10	4	45	
2.50 but under 3.00			20	2		5	40	
2.00 but under 2.50			8	1		2	5	
1.50 but under 2.00								
Under \$1.50								
Totals	919	74	130	8	1,037	65	161	1

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

ELECTRIC AND GAS LIGHTING POWER AND STREET RAILWAYS.

(49 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$5.00 per wk. & over	14				12			
31.00 but under \$25.00	29				23			
18.00 but under 20.00	76				23			
15.00 but under 18.00	122				128			
13.00 but under 15.00	54				87			
12.00 but under 13.00	716				753			
11.00 but under 12.00	51				72			
10.00 but under 11.00	225				258			
9.00 but under 10.00	85				314			
8.00 but under 9.00	77				107			
7.00 but under 8.00	131				252	2		
6.00 but under 7.00	95	1			21			
5.50 but under 6.00	269				2			
5.00 but under 5.50	67	3	1		6		1	
4.50 but under 5.00	8				12		2	
4.00 but under 4.50	13				6			2
3.50 but under 4.00	1		2				2	2
3.00 but under 3.50		1					4	
2.50 but under 3.00							12	
2.00 but under 2.50							4	
1.50 but under 2.00							3	
Under \$1.50								
Totals	2,093	5	3		2,066	2	28	4

FANCY ARTICLES.

(8 establishments.)

\$5.00 per wk. & over					1			
31.00 but under \$25.00	1				2			
18.00 but under 20.00	6				5			
15.00 but under 18.00	5				7			
13.00 but under 15.00	4				6			
12.00 but under 13.00	2				4			
11.00 but under 12.00	3				3			
10.00 but under 11.00	15				23			
9.00 but under 10.00	16	1			15	1		
8.00 but under 9.00	13				16	1		
7.00 but under 8.00	29		1		13			
6.00 but under 7.00	19		2		25			
5.50 but under 6.00	5	1			2			
5.00 but under 5.50	4		1		7			
4.50 but under 5.00	2				5		1	
4.00 but under 4.50	1	2	1		3		1	
3.50 but under 4.00	1	3	2		4	3	2	
3.00 but under 3.50		19	8	5	1	21	10	6
2.50 but under 3.00		9	3			5		
2.00 but under 2.50		1	2	3		2	2	3
1.50 but under 2.00						1		
Under \$1.50								
Totals	126	36	20	8	138	38	17	9

TABLE XIV.—Classified weekly earnings by industries, 1897 and 1898.

FLOUR AND FEED.

(86 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age	Fe- males under 18 years of age
\$25.00 per wk. & over	15				11			
20.00 but under \$25.00	10				21			
18.00 but under 20.00	14				21			
15.00 but under 18.00	82				89			
13.00 but under 15.00	64				125			
12.00 but under 13.00	80				127			
11.00 but under 12.00	42				53			
10.00 but under 11.00	220				206			
9.00 but under 10.00	290	1			253	1		
8.00 but under 9.00	108	2			99			
7.00 but under 8.00	122				101		2	
6.00 but under 7.00	61		1		63		3	
5.50 but under 6.00	5				6	1		
5.00 but under 5.50	7		3		4	1	1	
4.50 but under 5.00	5		1					
4.00 but under 4.50	1				3	1		
3.50 but under 4.00		1	1	1	3	6		
3.00 but under 3.50	4	4	1	1	7		1	
2.50 but under 3.00		1					1	
2.00 but under 2.50								
1.50 but under 2.00								
Under \$1.50								
Totals	1,130	9	7	2	1,197	10	8	

FOOD PREPARATIONS.

(31 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age	Fe- males under 18 years of age
\$25.00 per wk. & over	9				28			
20.00 but under \$25.00	27				11			
18.00 but under 20.00	37				8			
15.00 but under 18.00	53				46			
13.00 but under 15.00	87				129			
12.00 but under 13.00	125				196			
11.00 but under 12.00	55				45			
10.00 but under 11.00	115				259			
9.00 but under 10.00	388				273			
8.00 but under 9.00	122				435			
7.00 but under 8.00	608				590	3	10	
6.00 but under 7.00	125	1	15		149	13	12	
5.50 but under 6.00	79	1	2		56			
5.00 but under 5.50	113	3	4		110	9		
4.50 but under 5.00	11	314	380	104	173	209	353	
4.00 but under 4.50	16	280	107	103	65	292	106	
3.50 but under 4.00	1	5	115	186	7	119	311	
3.00 but under 3.50		7	21	98	17	5	122	
2.50 but under 3.00		5	12	21		7	9	
2.00 but under 2.50		5	11	16		3	18	
1.50 but under 2.00			8				14	
Under \$1.50			2					
Totals	1,971	621	677	528	2,602	660	954	

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

FURNITURE.

(42 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	5	.....	.....	.....	2	.....	.....	.....
20.00 but under \$25.00	3	.....	.....	.....	1	.....	.....	.....
18.00 but under 20.00	17	.....	.....	.....	13	.....	.....	.....
15.00 but under 18.00	36	.....	.....	.....	52	.....	.....	.....
13.00 but under 15.00	52	.....	.....	.....	48	.....	.....	.....
12.00 but under 13.00	84	.....	.....	.....	94	.....	.....	.....
11.00 but under 12.00	63	3	.....	.....	70	2	.....	.....
10.00 but under 11.00	148	1	.....	.....	178	.....	.....	.....
9.00 but under 10.00	266	1	.....	.....	310	.....	.....	.....
8.00 but under 9.00	225	.....	.....	.....	334	.....	.....	.....
7.00 but under 8.00	452	.....	1	.....	446	5	.....	.....
6.00 but under 7.00	650	7	24	.....	749	21	.....	.....
5.50 but under 6.00	63	2	19	.....	123	6	16	.....
5.00 but under 5.50	53	1	39	.....	92	2	16	.....
4.50 but under 5.00	40	11	55	3	4	1	60	.....
4.00 but under 4.50	13	6	30	4	30	3	58	.....
3.50 but under 4.00	15	.....	58	3	12	1	67	.....
3.00 but under 3.50	1	6	14	5	1	1	87	2
2.50 but under 3.00	.....	.....	108	6	.....	.....	98	.....
2.00 but under 2.50	.....	.....	75	4	.....	1	66	.....
1.50 but under 2.00	.....	.....	9	.....	.....	.....	5	.....
Under \$1.50	.....	.....	.....	2	.....	.....	2	.....
Totals	2,186	38	432	31	2,572	43	485	2

FURS, GLOVES AND MITTENS.

(11 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	3	.....	.....	.....	5	.....	.....	.....
20.00 but under \$25.00	.....	.....	.....	.....	.....	.....	.....	.....
19.00 but under 20.00	3	.....	.....	.....	7	.....	.....	.....
15.00 but under 18.00	5	.....	.....	.....	6	.....	.....	.....
13.00 but under 15.00	4	.....	.....	.....	20	.....	.....	.....
12.00 but under 13.00	14	.....	.....	.....	14	.....	.....	.....
11.00 but under 12.00	2	1	.....	.....	3	9	.....	.....
10.00 but under 11.00	17	8	.....	.....	15	6	.....	.....
9.00 but under 10.00	11	9	.....	.....	15	13	.....	.....
8.00 but under 9.00	7	6	.....	.....	2	14	.....	.....
7.00 but under 8.00	1	24	.....	.....	10	17	.....	.....
6.00 but under 7.00	16	21	.....	.....	14	27	.....	.....
5.50 but under 6.00	.....	6	1	.....	1	14	.....	.....
5.00 but under 5.50	9	18	.....	.....	24	3	.....	.....
4.50 but under 5.00	1	33	10	3	3	29	3	.....
4.00 but under 4.50	.....	20	.....	.....	.....	2	.....	4
3.50 but under 4.00	.....	33	4	1	1	7	2	.....
3.00 but under 3.50	.....	7	.....	9	.....	.....	1	.....
2.50 but under 3.00	.....	2	4	5	.....	42	3	4
2.00 but under 2.50	.....	4	.....	.....	.....	3	2	3
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	2	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	93	192	19	18	116	229	15	15

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

GRAIN AND WAREHOUSE MEN.

(12 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	6				5			
20.00 but under \$25.00					1			
18.00 but under 20.00	13				16			
15.00 but under 18.00	22				17			
13.00 but under 15.00	8				28			
12.00 but under 13.00	15				90			
11.00 but under 12.00	6				8			
10.00 but under 11.00	172				34			
9.00 but under 10.00	40				56			
8.00 but under 9.00	5				1			
7.00 but under 8.00	2							
6.00 but under 7.00					3			
5.50 but under 6.00								
5.00 but under 5.50								
4.50 but under 5.00								
4.00 but under 4.50								
3.50 but under 4.00								
3.00 but under 3.50								
2.50 but under 3.00								
2.00 but under 2.50								
1.50 but under 2.00								
Under \$1.50								
Totals	229				259			

IRON GOODS (MALLEABLE).

(25 establishments.)

\$25.00 per wk. & over	86				122			
20.00 but under \$25.00	57				264			
18.00 but under 20.00	63				140			
15.00 but under 18.00	186				224			
13.00 but under 15.00	161				201			
12.00 but under 13.00	312				491			
11.00 but under 12.00	186				287	3		
10.00 but under 11.00	308	3			406	3		
9.00 but under 10.00	382				625	6		
8.00 but under 9.00	418				547	6		
7.00 but under 8.00	673	9	1		1,064		1	
6.00 but under 7.00	477	5	6		327	5	38	
5.50 but under 6.00	78		22		59	2	23	
5.00 but under 5.50	61	3	28		53		23	
4.50 but under 5.00	63		71		23	10	91	
4.00 but under 4.50	15		72		8	2	84	
3.50 but under 4.00	1		110			2	128	
3.00 but under 3.50	3	2	73	2		5	105	
2.50 but under 3.00			4				15	
2.00 but under 2.50			8				2	
1.50 but under 2.00			6					
Under \$1.50								
Totals	3,540	22	401	2	4,841	44	510	

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

IRON (FIG).

(2 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	3							
20.00 but under \$25.00								
18.00 but under 20.00								
15.00 but under 18.00	2				3			
13.00 but under 15.00	15				18			
12.00 but under 13.00	10				6			
11.00 but under 12.00	14				15			
10.00 but under 11.00	9				29			
9.00 but under 10.00	47				63			
8.00 but under 9.00	35				22			
7.00 but under 8.00	41				67			
6.00 but under 7.00								
5.50 but under 6.00					1			
5.00 but under 5.50								
4.50 but under 5.00								
4.00 but under 4.50								
3.50 but under 4.00								
3.00 but under 3.50								
2.50 but under 3.00								
2.00 but under 2.50								
1.50 but under 2.00								
Under \$1.50								
Totals	176				224			

KNIT GOODS.

(15 establishments.)

\$25.00 per wk. & over	8				7			
20.00 but under \$25.00	4				8			
18.00 but under 20.00	9				11			
15.00 but under 18.00	20				20			
13.00 but under 15.00	5				15			
12.00 but under 13.00	24				18			
11.00 but under 12.00	3				17			
10.00 but under 11.00	2				16	6		
9.00 but under 10.00	6				40	11		
8.00 but under 9.00	31	5			47	32		
7.00 but under 8.00	1	36			52	34	10	16
6.00 but under 7.00	30	13	41	59	41	63	5	30
5.50 but under 6.00	1	66	22	20		92	4	
5.00 but under 5.50	2	27	3		1	87	30	43
4.50 but under 5.00	2	143			3	147	31	18
4.00 but under 4.50	3	134	28	3	1	142	25	84
3.50 but under 4.00	1	115	25	97	1	150	6	31
3.00 but under 3.50	2	140	10	50	2	78	36	180
2.50 but under 3.00		84	18	211		22	13	81
2.00 but under 2.50		48	1	129		21		199
1.50 but under 2.00		36		49				72
Under \$1.50		12	2	54				16
Totals	154	863	150	696	300	902	172	770

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

LAGER BEER.

(71 establishments.)

CLASSIFICATION OF WEEKLY WAGES	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	40	.....	.....	.....	29	.....	.....	.....
20.00 but under \$25.00	40	.....	.....	.....	22	.....	.....	.....
18.00 but under 20.00	42	.....	.....	.....	27	.....	.....	.....
15.00 but under 18.00	690	.....	.....	.....	504	.....	.....	.....
13.00 but under 15.00	518	.....	.....	.....	519	.....	.....	.....
12.00 but under 13.00	331	.....	.....	.....	456	.....	.....	.....
11.00 but under 12.00	183	.....	.....	.....	135	.....	.....	.....
10.00 but under 11.00	219	.....	.....	.....	185	.....	.....	.....
9.00 but under 10.00	229	.....	.....	.....	314	.....	.....	.....
8.00 but under 9.00	73	.....	.....	.....	83	.....	.....	.....
7.00 but under 8.00	128	2	.....	.....	49	.....	.....	.....
6.00 but under 7.00	65	7	2	.....	134	1	.....	.....
5.50 but under 6.00	27	.....	8	.....	7	1	.....	.....
5.00 but under 5.50	17	2	11	.....	18	3	4	.....
4.50 but under 5.00	14	.....	54	.....	48	127	30	.....
4.00 but under 4.50	19	73	58	.....	2	5	13	.....
3.50 but under 4.00	23	1	75	.....	.....	83	34	.....
3.00 but under 3.50	.....	11	50	22	.....	.....	75	.....
2.50 but under 3.00	.....	7	8	75	.....	66	2	.....
2.00 but under 2.50	.....	21	52	.....	.....	.....	2	.....
1.50 but under 2.00	.....	.....	.....	3	.....	.....	1	.....
Under \$1.50	.....	.....	.....	6	.....	.....	.....	.....
Totals	2,648	123	318	106	2,532	286	161	1

LAUNDRIES.

(75 establishments.)

CLASSIFICATION OF WEEKLY WAGES	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	2	.....	.....	.....	1	.....	.....	.....
20.00 but under \$25.00	3	.....	.....	.....	2	.....	.....	.....
18.00 but under 20.00	8	.....	.....	.....	19	.....	.....	.....
15.00 but under 18.00	17	.....	.....	.....	8	.....	.....	.....
13.00 but under 15.00	16	.....	.....	.....	15	.....	.....	.....
12.00 but under 13.00	16	6	.....	.....	24	.....	.....	.....
11.00 but under 12.00	30	2	.....	.....	36	3	.....	.....
10.00 but under 11.00	22	12	.....	.....	48	8	.....	.....
9.00 but under 10.00	19	11	.....	.....	28	10	.....	.....
8.00 but under 9.00	18	27	.....	.....	16	28	1	.....
7.00 but under 8.00	9	114	2	.....	4	98	5	.....
6.00 but under 7.00	8	39	1	.....	7	76	.....	.....
5.50 but under 6.00	3	116	.....	.....	11	131	.....	.....
5.00 but under 5.50	1	48	1	1	4	77	.....	.....
4.50 but under 5.00	.....	70	7	1	4	45	6	.....
4.00 but under 4.50	5	63	2	5	.....	26	10	.....
3.50 but under 4.00	.....	42	2	10	.....	7	14	.....
3.00 but under 3.50	.....	16	9	6	.....	.....	.....	.....
2.50 but under 3.00	.....	6	2	.....	.....	.....	.....	.....
2.00 but under 2.50	.....	1	1	.....	.....	.....	.....	.....
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	184	573	27	32	227	589	36	.....

TABLE XIV.—Classified weekly earnings by industries, 1897 and 1898.

LEATHER.

(33 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	18	.....	.....	.....	10	.....	.....	.....
20.00 but under \$25.00	25	.....	.....	.....	14	.....	.....	.....
18.00 but under 20.00	29	.....	.....	.....	25	.....	.....	.....
15.00 but under 18.00	97	.....	.....	.....	116	.....	.....	.....
13.00 but under 15.00	177	.....	.....	.....	142	.....	.....	.....
12.00 but under 13.00	232	.....	.....	.....	193	.....	.....	.....
11.00 but under 12.00	200	.....	.....	.....	198	.....	.....	.....
10.00 but under 11.00	212	.....	.....	.....	212	.....	.....	.....
9.00 but under 10.00	900	.....	.....	.....	1,075	.....	.....	.....
8.00 but under 9.00	1,191	2	.....	.....	1,142	4	.....	.....
7.00 but under 8.00	870	2	.....	.....	996	.....	.....	.....
6.00 but under 7.00	306	25	35	.....	204	26	7	.....
5.50 but under 6.00	33	25	10	.....	53	25	13	.....
5.00 but under 5.50	55	46	9	.....	49	50	21	.....
4.50 but under 5.00	23	51	15	.....	15	61	60	.....
4.00 but under 4.50	35	.....	32	.....	11	32	79	.....
3.50 but under 4.00	.....	20	28	6	.....	27	66	16
3.00 but under 3.50	7	18	55	25	.....	24	55	36
2.50 but under 3.00	.....	.....	27	11	.....	.....	53	23
2.00 but under 2.50	.....	.....	14	3	.....	.....	.....	1
1.50 but under 2.00	.....	.....	.....	1	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	4,409	189	225	46	4,455	249	354	76

LITHOGRAPHING AND ENGRAVING.

(7 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	24	.....	.....	.....	17	.....	.....	.....
20.00 but under \$25.00	23	.....	.....	.....	16	.....	.....	.....
18.00 but under 20.00	33	.....	.....	.....	41	.....	.....	.....
15.00 but under 18.00	21	.....	.....	.....	30	.....	.....	.....
13.00 but under 15.00	24	.....	.....	.....	15	.....	.....	.....
12.00 but under 13.00	26	.....	.....	.....	17	.....	.....	.....
11.00 but under 12.00	10	.....	.....	.....	12	.....	.....	.....
10.00 but under 11.00	8	.....	.....	.....	15	.....	.....	.....
9.00 but under 10.00	16	.....	.....	.....	18	1	.....	.....
8.00 but under 9.00	13	.....	.....	.....	17	.....	.....	.....
7.00 but under 8.00	25	1	.....	.....	13	1	.....	.....
6.00 but under 7.00	26	1	.....	.....	21	2	2	.....
5.50 but under 6.00	20	.....	.....	.....	9	.....	.....	.....
5.00 but under 5.50	11	3	.....	.....	8	1	3	.....
4.50 but under 5.00	9	2	1	.....	4	2	2	.....
4.00 but under 4.50	12	1	2	1	4	9	7	.....
3.50 but under 4.00	19	3	7	3	2	3	9	2
3.00 but under 3.50	11	5	15	6	.....	2	23	24
2.50 but under 3.00	.....	3	33	2	.....	.....	39	6
2.00 but under 2.50	.....	.....	11	1	.....	.....	38	10
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	331	19	69	13	269	21	123	42

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

LUMBER, LATH AND SHINGLES.

(168 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	226	.....	.....	.....	259	.....	.....	.....
20.00 but under \$25.00	228	.....	.....	.....	254	.....	.....	.....
18.00 but under 20.00	178	.....	.....	.....	206	.....	.....	.....
15.00 but under 18.00	319	.....	.....	.....	411	.....	.....	.....
13.00 but under 15.00	381	.....	.....	.....	539	.....	.....	.....
12.00 but under 13.00	596	.....	.....	.....	628	.....	.....	.....
11.00 but under 12.00	436	.....	.....	.....	412	1	.....	.....
10.00 but under 11.00	844	8	.....	.....	989	.....	.....	.....
9.00 but under 10.00	2,856	2	.....	.....	3,991	1	.....	.....
8.00 but under 9.00	3,916	4	.....	.....	3,850	4	.....	.....
7.00 but under 8.00	4,494	10	16	2	4,119	2	19	.....
6.00 but under 7.00	1,668	21	44	.....	1,710	13	83	.....
5.50 but under 6.00	139	.....	38	.....	161	34	35	.....
5.00 but under 5.50	151	34	26	.....	139	26	31	.....
4.50 but under 5.00	175	5	130	.....	178	17	119	.....
4.00 but under 4.50	12	2	64	.....	12	.....	70	.....
3.50 but under 4.00	13	.....	92	.....	4	1	112	.....
3.00 but under 3.50	6	4	124	.....	.....	9	96	.....
2.50 but under 3.00	.....	7	65	4	.....	8	80	.....
2.00 but under 2.50	.....	5	30	2	.....	2	5	.....
1.50 but under 2.00	.....	.....	2	.....	.....	5	8	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	16,638	102	631	8	17,862	123	658	.....

MALT.

(20 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	17	.....	.....	.....	11	.....	.....	.....
20.00 but under \$25.00	5	.....	.....	.....	3	.....	.....	.....
18.00 but under 20.00	5	.....	.....	.....	4	.....	.....	.....
15.00 but under 18.00	17	.....	.....	.....	14	.....	.....	.....
13.00 but under 15.00	23	.....	.....	.....	32	.....	.....	.....
12.00 but under 13.00	80	.....	.....	.....	94	.....	.....	.....
11.00 but under 12.00	163	.....	.....	.....	108	.....	.....	.....
10.00 but under 11.00	65	.....	.....	.....	98	.....	.....	.....
9.00 but under 10.00	72	1	.....	.....	101	.....	.....	.....
8.00 but under 9.00	63	.....	.....	.....	63	.....	.....	.....
7.00 but under 8.00	53	.....	.....	.....	25	.....	.....	.....
6.00 but under 7.00	2	.....	.....	.....	6	1	.....	.....
5.50 but under 6.00	.....	.....	.....	.....	.....	.....	.....	.....
5.00 but under 5.50	.....	1	.....	.....	.....	.....	.....	.....
4.50 but under 5.00	.....	.....	.....	.....	.....	.....	2	.....
4.00 but under 4.50	.....	.....	.....	.....	.....	.....	.....	.....
3.50 but under 4.00	.....	.....	1	.....	.....	.....	.....	.....
3.00 but under 3.50	.....	.....	.....	.....	.....	.....	.....	.....
2.50 but under 3.00	.....	.....	.....	.....	.....	.....	.....	.....
2.00 but under 2.50	.....	.....	.....	.....	.....	.....	.....	.....
1.50 but under 2.00	.....	.....	1	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	1	.....
Totals	566	2	2	.....	564	1	3	.....

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1893.*

MACHINES AND MACHINERY.

(86 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 15 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 15 years of age.
\$25.00 per wk. & over	56				73			
20.00 but under \$25.00	87				94			
18.00 but under 20.00	165				198			
15.00 but under 18.00	440				647			
13.00 but under 15.00	636				751			
12.00 but under 13.00	445				563			
11.00 but under 12.00	102	1			183	2		
10.00 but under 11.00	429	1			458	4		
9.00 but under 10.00	483	1			853	4		
8.00 but under 9.00	508				626			
7.00 but under 8.00	504		1		543	2	4	
6.00 but under 7.00	191	6	3		249	1	9	
5.50 but under 6.00	35		5		22	1	10	
5.00 but under 5.50	41	5	18		47	1	21	
4.50 but under 5.00	46		33		57		45	
4.00 but under 4.50	11	3	54		14	1	41	
3.50 but under 4.00			48		7		49	
3.00 but under 3.50	2		103		6		127	
2.50 but under 3.00			12				16	
2.00 but under 2.50			17	1			16	
1.50 but under 2.00			1					
Under \$1.50								
Totals	4,181	17	295	1	5,396	14	338	

MIXED TEXTILES.

(9 establishments.)

\$25.00 per wk. & over								
20.00 but under \$25.00					3			
18.00 but under 20.00	1				3			
15.00 but under 18.00	7				7			
13.00 but under 15.00	15				17			
12.00 but under 13.00	11				13			
11.00 but under 12.00					2			
10.00 but under 11.00	4	1			14	6		
9.00 but under 10.00	16	7			21	4		
8.00 but under 9.00	10	3			5	9		
7.00 but under 8.00	18	9			11	1		
6.00 but under 7.00	12	10			9	32	4	
5.50 but under 6.00	4				2	29	6	2
5.00 but under 5.50	4	17	1			7	1	5
4.50 but under 5.00	2	11	12	5		8	2	8
4.00 but under 4.50		25	5	10		35	10	9
3.50 but under 4.00		33	2	5		3	12	3
3.00 but under 3.50		41	11	13		13	16	18
2.50 but under 3.00		3	12	10		2	27	33
2.00 but under 2.50		2		14			22	41
1.50 but under 2.00		2	15			1	22	27
Under \$1.50		8						25
Totals	104	172	58	57	107	150	122	171

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

OFFICE AND SALOON FIXTURES, ETC.

(15 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	2				1			
20.00 but under \$25.00	6				2			
18.00 but under 20.00	6				4			
15.00 but under 18.00	22				18			
13.00 but under 15.00	42				38			
12.00 but under 13.00	59				55			
11.00 but under 12.00	46				37			
10.00 but under 11.00	51				114			
9.00 but under 10.00	128				159			
8.00 but under 9.00	78	1			83			
7.00 but under 8.00	109		1		113			
6.00 but under 7.00	26				29		2	
5.50 but under 6.00	12				11		2	
5.00 but under 5.50	11				18		6	
4.50 but under 5.00	14				17		2	
4.00 but under 4.50	1		8		11		3	
3.50 but under 4.00			1		1		23	
3.00 but under 3.50			38				37	
2.50 but under 3.00			10				6	
2.00 but under 2.50				2			4	
1.50 but under 2.00								
Under \$1.50								
Totals	607	1	58	2	711		85	

PAINTS, OILS AND CRUDE CHEMICALS.

(7 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	6				6			
20.00 but under \$25.00	3				2			
18.00 but under 20.00	9				3			
15.00 but under 18.00	1							
13.00 but under 15.00	3				3			
12.00 but under 13.00	11				14			
11.00 but under 12.00	10				8			
10.00 but under 11.00	16				12	2		
9.00 but under 10.00	31				18			
8.00 but under 9.00	18				15			
7.00 but under 8.00	15				18			
6.00 but under 7.00	5	1			8	1		
5.50 but under 6.00	1							
5.00 but under 5.50	5				2			
4.50 but under 5.00	6		1		5			
4.00 but under 4.50								
3.50 but under 4.00			4		3	2		
3.00 but under 3.50			3			2	1	
2.50 but under 3.00								
2.00 but under 2.50								
1.50 but under 2.00								
Under \$1.50								
Totals	140	1	8		117	7	1	

TABLE XIV.—Classified weekly earnings by industries, 1897 and 1898.

PAPER AND PULP.

(34 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	11	5			7			
20.00 but under \$25.00	5				20			
18.00 but under 20.00	82				90			
15.00 but under 18.00	94				100			
13.00 but under 15.00	82				63			
12.00 but under 13.00	101				101			
11.00 but under 12.00	46				57			
10.00 but under 11.00	143				210			
9.00 but under 10.00	641				646			
8.00 but under 9.00	232				337			
7.00 but under 8.00	861	8			906	10		
6.00 but under 7.00	261	43	9	2	209	90	10	1
5.50 but under 6.00	22	6			20	17	2	1
5.00 but under 5.50	34	51	6		34	35	9	8
4.50 but under 5.00	21	263	42	23	39	347	21	5
4.00 but under 4.50	13	46	41		4	87	11	1
3.50 but under 4.00		3	94		1	47	20	
3.00 but under 3.50		80	32		2	69	9	53
2.50 but under 3.00				1				20
2.00 but under 2.50		2	1	14				23
1.50 but under 2.00								1
Under \$1.50								
Totals	2,649	502	225	41	2,846	702	82	113

PRINTERS SUPPLIES.

(4 establishments.)

\$25.00 per wk. & over	2				3			
20.00 but under \$25.00	3				2			
18.00 but under 20.00	4				4			
15.00 but under 18.00	6				7			
13.00 but under 15.00	2				3			
12.00 but under 13.00	7				9			
11.00 but under 12.00		1			1			
10.00 but under 11.00	22				25			
9.00 but under 10.00	25	1			32	1		
8.00 but under 9.00	18	1			29	1		
7.00 but under 8.00	29	3			32	4		
6.00 but under 7.00	28		3		37			
5.50 but under 6.00					8			
5.00 but under 5.50	6		2		7			
4.50 but under 5.00	4				6		2	
4.00 but under 4.50			1		3		1	
3.50 but under 4.00			10				7	
3.00 but under 3.50			7				21	
2.50 but under 3.00			6				7	
2.00 but under 2.50			1					
1.50 but under 2.00								
Under \$1.50								
Totals	156	6	30		203	6	38	

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

RAILWAY EQUIPMENT.

(20 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 15 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 15 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	28				31			
20.00 but under \$25.00	625				588			
18.00 but under 20.00	317				328			
15.00 but under 18.00	362				455			
13.00 but under 15.00	522				597			
12.00 but under 13.00	1,641				1,669			
11.00 but under 12.00	147				178	2		
10.00 but under 11.00	572				609	1		
9.00 but under 10.00	3,575	1			3,555	1		
8.00 but under 9.00	486				539			
7.00 but under 8.00	1,637	3	2		1,685	2	1	1
6.00 but under 7.00	114		6		201		6	
5.50 but under 6.00	29				3	2		
5.00 but under 5.50	14				6		11	
4.50 but under 5.00	30		3		1			
4.00 but under 4.50	1							
3.50 but under 4.00								
3.00 but under 3.50								
2.50 but under 3.00								
2.00 but under 2.50								
1.50 but under 2.00								
Under \$1.50								
Totals	10,100	4	11		10,445	8	18	1

SADDLERY, HARNESS, ETC.

(9 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 15 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 15 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	1				1			
20.00 but under \$25.00	3				2			
18.00 but under 20.00	6				2			
15.00 but under 18.00	8				13			
13.00 but under 15.00	3				6			
12.00 but under 13.00	15				24			
11.00 but under 12.00	7				4			
10.00 but under 11.00	21				33			
9.00 but under 10.00	30				18			
8.00 but under 9.00	13	3			18			
7.00 but under 8.00	15				35	3		
6.00 but under 7.00	29	2			19	2		
5.50 but under 6.00	9	7			2	6		
5.00 but under 5.50	6	5	1	1	3	6	3	
4.50 but under 5.00	1	3				2		
4.00 but under 4.50	3	3				6		
3.50 but under 4.00			7	2			3	
3.00 but under 3.50			11	4		2	8	10
2.50 but under 3.00			2	5			4	15
2.00 but under 2.50			6				2	
1.50 but under 2.00			2					
Under \$1.50								
Totals	170	23	33	16	181	27	24	43

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

SASH, DOORS, BLINDS AND MOULDINGS.

(73 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	7				4			
20.00 but under \$25.00	21				24			
15.00 but under 20.00	36				35			
10.00 but under 15.00	102				113			
5.00 but under 10.00	121				121			
12.00 but under 13.00	230				264			
11.00 but under 12.00	59				125			
10.00 but under 11.00	277				376			
9.00 but under 10.00	415	1			501	1		
8.00 but under 9.00	278				350			
7.00 but under 8.00	492				528			
6.00 but under 7.00	736	3	6		768			
5.50 but under 6.00	33				55	1		
5.00 but under 5.50	115	1			92		4	
4.50 but under 5.00	100		24		106	2	46	
4.00 but under 4.50	37	3	68		26	2	45	
3.50 but under 4.00	34	10	99		31	6	105	
3.00 but under 3.50	18	5	134	5	7	5	135	2
2.50 but under 3.00			115	1			89	2
2.00 but under 2.50		59	98	14			67	12
1.50 but under 2.00			8					
Under \$1.50								
Totals	3,111	82	639	20	3,526	21	496	16

SHEET METAL GOODS.

(26 establishments.)

\$25.00 per wk. & over	9				12			
20.00 but under \$25.00	13				14			
15.00 but under 20.00	13				15			
10.00 but under 15.00	62				68			
5.00 but under 10.00	34				50			
12.00 but under 13.00	82				93			
11.00 but under 12.00	29				43			
10.00 but under 11.00	77				83			
9.00 but under 10.00	118				156			
8.00 but under 9.00	124				134			
7.00 but under 8.00	97				199			
6.00 but under 7.00	213	1	1		161	2	3	
5.50 but under 6.00	108		5		49	2		
5.00 but under 5.50	114		2		96	6	6	
4.50 but under 5.00	103	5	17		75	5	4	
4.00 but under 4.50	40	16	206		201	18	26	
3.50 but under 4.00	19	13	262	12	81	227	59	10
3.00 but under 3.50	3	27	185	28	1	4	134	74
2.50 but under 3.00			90	15		1	80	30
2.00 but under 2.50			23	11			29	3
1.50 but under 2.00			3				13	10
Under \$1.50								
Totals	1,253	62	794	66	1,530	266	354	127

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

SHIP AND BOAT BUILDING.

(6 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age.	Fe- males under 18 years of age.
\$25.00 per wk. & over	2				3			
20.00 but under \$25.00	23				9			
18.00 but under 20.00	8				14			
15.00 but under 18.00	126				319			
13.00 but under 15.00	52				119			
12.00 but under 13.00	69				84			
11.00 but under 12.00					3			
10.00 but under 11.00	72				134			
9.00 but under 10.00	191				488			
8.00 but under 9.00	3				3			
7.00 but under 8.00	74				52			
6.00 but under 7.00	23	2			68	2		
5.50 but under 6.00	2							
5.00 but under 5.50								
4.50 but under 5.00	2				2			
4.00 but under 4.50							2	
3.50 but under 4.00			2				2	
3.00 but under 3.50					1		1	
2.50 but under 3.00		1	1					
2.00 but under 2.50			1					
1.50 but under 2.00			1					
Under \$1.50								
Totals	647	3	5		1,299	2	5	

SOAP, LYE AND POTASH.

(9 establishments.)

\$25.00 per wk. & over					1			
20.00 but under \$25.00					4			
18.00 but under 20.00	7				7			
15.00 but under 18.00	4				5			
13.00 but under 15.00	3				3			
12.00 but under 13.00	5				1			
11.00 but under 12.00	4				12			
10.00 but under 11.00	10				17			
9.00 but under 10.00	18				15			
8.00 but under 9.00	15				15			
7.00 but under 8.00	15				16	1	1	
6.00 but under 7.00	10		1		5		1	
5.50 but under 6.00	4				3		2	
5.00 but under 5.50	2	2				8	1	
4.50 but under 5.00	1	4				1	1	
4.00 but under 4.50	2		3					
3.50 but under 4.00		8	10			17	5	
3.00 but under 3.50		1	18	5		15		
2.50 but under 3.00			15	1		10	2	
2.00 but under 2.50		2						
1.50 but under 2.00								
Under \$1.50								
Totals	98	18	47	6	104	61	12	

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

STAVES AND HEADING.

(21 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over	Females 18 years of age and over.	Males under 18 years of age	Females under 18 years of age	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	.....	.....	.....	.....	.....	.....	.....	.....
20.00 but under \$25.00	.....	.....	.....	.....	.....	.....	.....	.....
18.00 but under 20.00	4	.....	.....	.....	8	.....	.....	.....
15.00 but under 18.00	3	.....	.....	.....	8	.....	.....	.....
13.00 but under 15.00	6	.....	.....	.....	10	.....	.....	.....
12.00 but under 13.00	26	.....	.....	.....	21	.....	.....	.....
11.00 but under 12.00	3	.....	.....	.....	7	.....	.....	.....
10.00 but under 11.00	25	.....	.....	.....	10	.....	.....	.....
9.00 but under 10.00	72	.....	.....	.....	97	.....	.....	.....
8.00 but under 9.00	104	.....	.....	.....	108	.....	.....	.....
7.00 but under 8.00	275	.....	3	.....	170	.....	.....	.....
6.00 but under 7.00	50	.....	9	.....	39	.....	9	.....
5.50 but under 6.00	7	.....	12	.....	18	.....	11	.....
5.00 but under 5.50	.....	.....	2	.....	.....	.....	6	.....
4.50 but under 5.00	8	.....	17	.....	8	.....	32	.....
4.00 but under 4.50	.....	.....	21	.....	.....	.....	11	.....
3.50 but under 4.00	.....	.....	32	.....	.....	.....	31	.....
3.00 but under 3.50	.....	.....	36	.....	.....	.....	9	.....
2.50 but under 3.00	.....	.....	1	.....	.....	.....	.....	.....
2.00 but under 2.50	.....	.....	.....	.....	.....	.....	.....	.....
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	582	.....	133	.....	504	.....	109	.....

STONE (GRANITE, MARBLE, ETC.)

(15 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over	Females 18 years of age and over.	Males under 18 years of age	Females under 18 years of age	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	2	.....	.....	.....	2	.....	.....	.....
20.00 but under \$25.00	19	.....	.....	.....	15	.....	.....	.....
18.00 but under 20.00	18	.....	.....	.....	6	.....	.....	.....
15.00 but under 18.00	10	.....	.....	.....	25	.....	.....	.....
13.00 but under 15.00	9	.....	.....	.....	21	.....	.....	.....
12.00 but under 13.00	32	.....	.....	.....	48	.....	.....	.....
11.00 but under 12.00	2	.....	.....	.....	6	.....	.....	.....
10.00 but under 11.00	43	.....	.....	.....	22	.....	.....	.....
9.00 but under 10.00	56	.....	.....	.....	33	.....	.....	.....
8.00 but under 9.00	4	.....	.....	.....	16	.....	.....	.....
7.00 but under 8.00	22	.....	.....	.....	15	.....	1	.....
6.00 but under 7.00	2	.....	.....	.....	6	.....	.....	.....
5.50 but under 6.00	.....	.....	.....	.....	.....	.....	.....	.....
5.00 but under 5.50	2	.....	.....	.....	2	.....	2	.....
4.50 but under 5.00	1	.....	.....	.....	.....	.....	.....	.....
4.00 but under 4.50	.....	.....	.....	.....	.....	.....	2	.....
3.50 but under 4.00	.....	.....	2	.....	1	.....	.....	.....
3.00 but under 3.50	.....	.....	.....	.....	.....	.....	2	.....
2.50 but under 3.00	.....	.....	.....	.....	.....	.....	.....	.....
2.00 but under 2.50	.....	.....	.....	.....	.....	.....	.....	.....
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	225	.....	2	.....	218	.....	7	.....

TABLE XIV.—Classified weekly earnings by industries, 1897 and 1898

STRAW GOODS.

(5 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age	Fe- males under 18 years of age	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age	Fe- males under 18 years of age
\$25.00 per wk. & over	2				3			
20.00 but under \$25.00	3				3			
18.00 but under 20.00	3				3			
15.00 but under 18.00	8				5			
13.00 but under 15.00	5				24			
12.00 but under 13.00	20				4			
11.00 but under 12.00	3				9	5		
10.00 but under 11.00	11	5			17	4		
9.00 but under 10.00	6	13			41			
8.00 but under 9.00	35				75	4		
7.00 but under 8.00	72	4			54	12		
6.00 but under 7.00	52				15	11		
5.50 but under 6.00	15				15	44		
5.00 but under 5.50	15	29			12	215		
4.50 but under 5.00	12	110			75		12	
4.00 but under 4.50		41	1		56		7	
3.50 but under 4.00		30	7	7	33			
3.00 but under 3.50		11	12	12				
2.50 but under 3.00			7					
2.00 but under 2.50				12				
1.50 but under 2.00								
Under \$1.50								
Totals	263	243	27	31	288	458	19	

TOYS AND GAMES.

(5 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age	Fe- males under 18 years of age	Males 18 years of age and over.	Fe- males 18 years of age and over.	Males under 18 years of age	Fe- males under 18 years of age
\$25.00 per wk. & over								
20.00 but under \$25.00	3				2			
18.00 but under 20.00	3				4			
15.00 but under 18.00	2				9			
13.00 but under 15.00	6				5			
12.00 but under 13.00	8				6			
11.00 but under 12.00	6				14			
10.00 but under 11.00	7				21			
9.00 but under 10.00	15				9			
8.00 but under 9.00	8				32			
7.00 but under 8.00	20				59			
6.00 but under 7.00	31		4		6			
5.50 but under 6.00	1		5		16			
5.00 but under 5.50	8	1	3		8		3	
4.50 but under 5.00	10	1	4		8	1	8	
4.00 but under 4.50	4		8		16		13	
3.50 but under 4.00	18	4	10		3		34	
3.00 but under 3.50	3	3	9		2		12	
2.50 but under 3.00			19				21	
2.00 but under 2.50			13				36	
1.50 but under 2.00			10				5	
Under \$1.50				24				
Totals	153	9	85	24	213	9	141	

TABLE XIV.—Classified weekly earnings by industries, 1897 and 1898.

TRUNKS, VALISES, ETC.

(9 establishments.)

CLASSIFICATION OF WEEKLY WAGES	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	3	.....	.....	.....	3	.....	.....	.....
20.00 but under \$25.00	.....	.....	.....	.....	1	.....	.....	.....
15.00 but under 20.00	3	.....	.....	.....	4	.....	.....	.....
15.00 but under 15.00	9	.....	.....	.....	12	.....	.....	.....
13.00 but under 15.00	10	.....	.....	.....	9	.....	.....	.....
12.00 but under 13.00	24	.....	.....	.....	25	.....	.....	.....
11.00 but under 12.00	14	1	.....	.....	14	.....	.....	.....
10.00 but under 11.00	29	.....	.....	.....	37	1	.....	.....
9.00 but under 10.00	81	1	.....	.....	97	1	.....	.....
9.00 but under 9.00	57	.....	.....	.....	70	.....	.....	.....
7.00 but under 8.00	84	.....	.....	.....	74	.....	.....	.....
6.00 but under 7.00	73	1	2	.....	66	2	1	.....
5.50 but under 6.00	25	.....	.....	.....	35	3	.....	.....
5.00 but under 5.50	26	2	.....	.....	19	6	6	.....
4.50 but under 5.00	39	7	4	2	32	15	12	2
4.00 but under 4.50	36	17	23	.....	10	17	19	3
3.50 but under 4.00	10	10	18	11	.....	11	18	3
3.00 but under 3.50	5	2	21	.....	.....	5	17	3
2.50 but under 3.00	.....	1	16	11	.....	1	18	18
2.00 but under 2.50	.....	2	13	2	.....	.....	5	16
1.50 but under 2.00	.....	.....	3	.....	.....	.....	.....	3
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	528	44	100	26	508	62	96	48

VENEER.

(9 establishments.)

CLASSIFICATION OF WEEKLY WAGES	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	1	.....	.....	.....	.....	.....	.....	.....
20.00 but under \$25.00	.....	.....	.....	.....	.....	.....	.....	.....
18.00 but under 20.00	.....	.....	.....	.....	1	.....	.....	.....
15.00 but under 18.00	6	.....	.....	.....	5	.....	.....	.....
13.00 but under 15.00	6	.....	.....	.....	9	.....	.....	.....
12.00 but under 13.00	10	.....	.....	.....	4	.....	.....	.....
11.00 but under 12.00	13	.....	.....	.....	3	.....	.....	.....
10.00 but under 11.00	15	.....	.....	.....	24	.....	.....	.....
9.00 but under 10.00	18	.....	.....	.....	44	.....	.....	.....
8.00 but under 9.00	44	.....	.....	.....	42	.....	.....	.....
7.00 but under 8.00	125	.....	.....	.....	152	.....	.....	.....
6.00 but under 7.00	79	.....	2	.....	74	.....	10	.....
5.50 but under 6.00	4	.....	.....	.....	7	.....	10	.....
5.00 but under 5.50	8	.....	.....	.....	11	.....	10	.....
4.50 but under 5.00	5	.....	10	.....	12	.....	23	.....
4.00 but under 4.50	20	.....	22	.....	.....	.....	21	.....
3.50 but under 4.00	.....	.....	37	.....	.....	.....	32	.....
3.00 but under 3.50	.....	.....	14	.....	.....	.....	45	.....
2.50 but under 3.00	.....	.....	6	.....	.....	.....	1	.....
2.00 but under 2.50	.....	.....	.....	.....	.....	.....	.....	.....
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	354	.....	91	.....	388	.....	152	.....

TABLE XIV.—*Classified weekly earnings by industries, 1897 and 1898.*

WAGONS, CARRIAGES AND SLEIGHS.

(53 establishments.)

CLASSIFICATION OF WEEKLY WAGES.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	9				5			
20.00 but under \$25.00	24				16			
18.00 but under 20.00	34				40			
15.00 but under 18.00	120				174			
13.00 but under 15.00	154				168			
12.00 but under 13.00	425				346			
11.00 but under 12.00	200	3			231	2		
10.00 but under 11.00	398	6			268	1		
9.00 but under 10.00	331	9			460	5		
8.00 but under 9.00	233	7			338	4		
7.00 but under 8.00	284	2	5		429	9	8	
6.00 but under 7.00	162	4	13		140	5	34	
5.50 but under 6.00	35	1	1		16		4	
5.00 but under 5.50	21		13		37	2		
4.50 but under 5.00	19		36		24	2	46	
4.00 but under 4.50	3	2	16		5	4	19	
3.50 but under 4.00		4	12		4	6	28	
3.00 but under 3.50		3	20	1		6	32	
2.50 but under 3.00			9				4	
2.00 but under 2.50			1			1	5	
1.50 but under 2.00			1					
Under \$1.50								
Totals	2,452	42	127	1	2,701	47	184	

WOODENWARE.

(11 establishments.)

\$25.00 per wk. & over								
20.00 but under \$25.00	3				1			
18.00 but under 20.00	4				4			
15.00 but under 18.00	12				6			
13.00 but under 15.00	15				13			
12.00 but under 13.00	11				20			
11.00 but under 12.00	24				16			
10.00 but under 11.00	69				35			
9.00 but under 10.00	69				91			
8.00 but under 9.00	326				69			
7.00 but under 8.00	365				373			
6.00 but under 7.00	152				414			
5.50 but under 6.00	33				200			
5.00 but under 5.50	15		4		34		5	
4.50 but under 5.00	4				14		2	
4.00 but under 4.50	2		6		9		115	
3.50 but under 4.00			25				8	
3.00 but under 3.50			44				28	
2.50 but under 3.00			66				33	
2.00 but under 2.50			12				55	
1.50 but under 2.00							2	
Under \$1.50								
Totals	1,104		226		1,299		253	

TABLE XIV.—Classified weekly earnings by industries, 1897 and 1898.

WOOLEN AND WORSTED GOODS.

(17 establishments.)

CLASSIFICATION OF WEEKLY EARNINGS.	1897.				1898.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per wk. & over	3	.....	.....	.....	6	.....	.....	.....
20.00 but under \$25.00	9	.....	.....	.....	3	.....	.....	.....
18.00 but under 20.00	13	.....	.....	.....	15	.....	.....	.....
15.00 but under 18.00	14	.....	.....	.....	15	.....	.....	.....
13.00 but under 15.00	10	.....	.....	.....	15	.....	.....	.....
12.00 but under 13.00	22	.....	.....	.....	23	.....	.....	.....
11.00 but under 12.00	4	.....	.....	.....	13	.....	.....	.....
10.00 but under 11.00	30	.....	.....	.....	38	3	.....	.....
9.00 but under 10.00	75	6	.....	.....	61	15	.....	.....
8.00 but under 9.00	28	18	.....	.....	21	27	.....	.....
7.00 but under 8.00	56	7	.....	.....	40	36	.....	.....
6.00 but under 7.00	102	47	.....	1	117	57	1	.....
5.50 but under 6.00	22	18	2	3	11	14	3	.....
5.00 but under 5.50	6	35	1	.....	18	49	.....	4
4.50 but under 5.00	31	78	5	3	21	63	13	4
4.00 but under 4.50	13	73	4	5	2	71	8	6
3.50 but under 4.00	2	67	8	21	6	25	11	10
3.00 but under 3.50	.....	122	27	80	.....	75	14	107
2.50 but under 3.00	.....	7	8	41	.....	8	13	58
2.00 but under 2.50	.....	3	14	29	.....	3	8	17
1.50 but under 2.00	.....	.....	.....	11	.....	1	.....	12
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	442	481	69	194	431	457	77	218

MISCELLANEOUS.

(13 establishments.)

\$25.00 per wk. & over	2	.....	.....	.....	15	.....	.....	.....
20.00 but under \$25.00	3	.....	.....	.....	44	.....	.....	.....
18.00 but under 20.00	3	.....	.....	.....	7	.....	.....	.....
15.00 but under 18.00	10	.....	.....	.....	27	.....	.....	.....
13.00 but under 15.00	8	.....	.....	.....	6	.....	.....	.....
12.00 but under 13.00	16	.....	.....	.....	57	.....	.....	.....
11.00 but under 12.00	7	.....	.....	.....	7	.....	.....	.....
10.00 but under 11.00	25	.....	.....	.....	23	.....	.....	.....
9.00 but under 10.00	32	.....	.....	.....	49	.....	.....	.....
8.00 but under 9.00	47	.....	.....	.....	26	.....	.....	.....
7.00 but under 8.00	20	11	.....	.....	51	.....	.....	.....
6.00 but under 7.00	21	6	1	.....	16	.....	.....	.....
5.50 but under 6.00	2	3	.....	.....	8	.....	.....	.....
5.00 but under 5.50	6	32	.....	.....	11	2	1	.....
4.50 but under 5.00	4	14	3	.....	9	1	.....	.....
4.00 but under 4.50	11	.....	12	1	2	10	86	.....
3.50 but under 4.00	12	.....	7	.....	.....	.....	.....	.....
3.00 but under 3.50	2	13	1	17	.....	7	83	1
2.50 but under 3.00	.....	10	2	9	.....	.....	1	.....
2.00 but under 2.50	.....	1	1	5	.....	.....	1	.....
1.50 but under 2.00	.....	.....	.....	2	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....
Totals	231	90	27	34	358	20	177	1

TABLE XV.—*Days in operation, by industries, 1897 and 1898.*

EXPLANATION OF TABLE XV.

This table shows the average number of days in operation in each of the industries considered together with the increase or decrease in 1898 as compared with 1897.

INDUSTRIES.	No. of establishments.	Average number of days in operation.		Increase + or decrease — in 1898.
		1897.	1898.	
				Days.
Agricultural implements	31	264.22	284.54	+ 20.32
Artisans' tools and hardware supplies..	10	267.20	294.66	+ 27.46
Beverages (not spirituous, soft drinks).	18	271.19	279.44	+ 8.25
Bicycles, tricycles, etc.....	7	265.71	269.16	+ 3.45
Boots and shoes	24	275.12	283.54	+ 8.42
Boxes (wooden and paper).....	29	266.44	282.09	+ 4.35
Brick, tiles and sewer pipe	23	152.65	134.00	— 18.65
Brooms, brushes, baskets, etc.....	19	245.26	280.77	+ 35.51
Burial cases, caskets, coffins, etc.....	4	275.25	286.26	+ 11.00
Cement, lime, plaster, etc.....	12	253.92	248.16	— 5.76
Chairs	13	272.23	263.23	+ 11.00
Chemical preparations	13	308.61	293.00	— 15.61
Cigars, snuffs and tobacco	54	284.15	284.15	—
Clothing	25	283.24	287.54	+ 4.30
Coal and wood	28	303.28	296.21	+ 7.07
Confectioneries, crackers, etc.....	12	285.53	283.41	— 2.12
Cooking and heating apparatus.....	24	274.52	292.40	+ 17.88
Cooperage	21	236.24	264.88	+ 28.64
Cotton and linen goods	5	256.80	304.20	+ 47.40
Electrical and gas apparatus and supplies	21	292.95	294.44	+ 1.49
Electric and gas lighting power and street railways	49	361.21	364.75	+ 3.54
Fancy articles	8	242.00	303.75	+ 61.75
Flour and feed	86	271.42	271.64	+ 0.22
Food preparations	31	238.26	256.46	+ 18.20
Furniture	42	266.74	282.06	+ 15.32
Furs, gloves and mittens	11	271.94	287.18	+ 15.24
Grain and warehouse men.....	12	277.00	288.00	+ 11.00
Iron goods (malleable)	25	281.22	281.61	+ 0.39
Iron (pig)	2	191.00	355.00	+ 164.00
Knit goods	15	284.00	296.46	+ 11.46
Lager beer	71	300.97	302.56	+ 1.59
Laundries	75	295.78	293.12	— 2.66
Leather	33	293.03	287.15	— 5.88
Lithographing and engraving	7	306.00	302.85	— 3.15
Lumber, lath and shingles.....	168	203.91	200.66	— 3.25
Malt	20	291.45	289.20	— 2.25
Machines and machinery.....	86	282.88	296.56	+ 13.68
Mixed textiles	9	270.00	293.55	+ 23.55
Office and saloon fixtures, etc.....	15	270.64	296.00	+ 25.36
Paints, oils and crude chemicals.....	7	291.14	286.00	— 5.14
Paper and pulp	34	287.85	289.02	+ 1.17
Printers' supplies	4	299.00	303.50	+ 4.50
Railway equipment	20	304.19	314.50	+ 10.31
Saddlery and harness, etc.....	9	287.11	294.22	+ 7.11
Sash, doors, blinds and mouldings.....	73	257.14	265.95	+ 8.81
Sheet metal goods	26	286.54	290.74	+ 4.20
Ship and boat building	6	212.33	256.66	+ 44.30
Soap, lye and potash	9	296.22	296.33	+ 0.11
Staves and heading	21	230.76	255.21	+ 24.45
Stone (granite, marble, etc.).....	10	251.20	255.87	+ 4.67
Straw goods	5	244.40	293.20	+ 48.80
Toys and games	5	245.60	285.80	+ 40.20
Trunks, valises, etc.	9	288.33	294.00	+ 5.67
Veneer	9	263.89	273.22	+ 9.33
Wagons, carriages and sleighs	53	287.35	291.06	+ 3.71
Woodenware	11	266.50	272.09	+ 5.59
Woolen and worsted goods	17	268.12	260.70	— 7.42
Miscellaneous	13	286.28	291.60	+ 5.32
All Industries	1,499	270.81	283.60	+ 12.79

TABLE XVI.—*Proportion of business done, by industries, 1897 and 1898.*

EXPLANATION OF TABLE XVI.

This table shows the average proportion of business done in 1897 and 1898 together with the increase of 1898 as compared with the preceding year. The greatest capacity for production was considered as 100, and the amount of business actually done is indicated in percentages or proportion of this sum.

INDUSTRIES.	No. of establishments.	Average proportion of business done.		Increase + or decrease —.	
		1897.	1898.	Proportion.	
Agricultural implements	31	70.20	93.34	+	3.14
Artisans' tools and hardware specialties	10	70.10	82.11	+	12.01
Beverages (not spirituous, soft drinks)	18	64.83	72.66	+	7.82
Bicycles, tricycles, etc.	7	58.60	68.33	+	9.73
Boots and shoes	24	76.29	80.33	+	4.04
Boxes (wooden and paper)	29	78.19	76.56	—	1.64
Brick, tile and sewer pipe	23	49.75	55.85	+	6.10
Brooms, brushes, baskets, etc.	19	68.96	76.67	+	7.72
Burial cases, caskets, coffins, etc.	4	76.25	68.75	—	7.50
Cement, lime, plaster, etc.	12	62.17	64.75	+	2.58
Chairs	13	71.92	75.61	+	3.69
Chemical preparations	13	71.25	66.33	—	4.92
Cigars, snuff and tobacco	54	79.04	75.96	—	3.08
Clothing	25	77.04	76.75	—	0.29
Coal and wood	28	77.61	77.75	+	0.14
Confectioneries, crackers, etc.	12	76.50	72.08	—	4.42
Cooking and heating apparatus	24	64.76	70.90	+	6.14
Cooperage	21	64.24	66.71	+	2.47
Cotton and linen goods	5	81.40	86.00	+	4.60
Electrical and gas apparatus and supplies	21	72.86	80.10	+	7.24
Electric and gas lighting power and street railways	49	71.73	75.50	+	3.77
Fancy articles	8	61.12	74.16	+	13.04
Floor and feed	86	75.27	73.00	—	2.27
Food preparations	31	67.00	70.83	+	3.83
Furniture	42	67.14	74.21	+	7.07
Furs, gloves and mittens	11	76.85	79.36	+	3.51
Grain and warehouse men	12	61.10	71.91	+	10.81
Iron goods (malleable)	26	68.30	81.81	+	13.51
Iron (pig)	2	55.50	97.50	+	42.00
Knit goods	15	71.20	84.66	+	13.46
Lager beer	71	64.34	67.71	+	3.37
Laundries	75	70.00	72.50	+	2.50
Leather	33	79.61	74.51	—	5.10
Lithographing and engraving	7	81.12	81.43	+	0.31
Lumber, lath and shingles	168	70.00	71.26	+	1.26
Malt	20	88.75	90.50	+	1.75
Machines and machinery	86	68.10	70.09	+	1.99
Mixed textiles	9	69.50	73.88	+	4.38
Office and saloon fixtures, etc.	15	70.78	73.61	+	2.83
Paints, oils and crude chemicals	7	74.86	74.17	—	0.69
Paper and pulp	34	88.00	84.64	—	3.36
Printers' supplies	4	75.09	68.75	—	6.34
Saddlery, harness, etc.	9	78.44	73.33	—	5.11
Rash, doors, blinds and mouldings	73	69.76	70.49	—	0.73
Sheet metal goods	26	75.00	72.39	—	2.61
Ship and boat building	6	64.67	75.00	+	10.33
Soap, lye and potash	9	78.89	76.26	—	2.63
Staves and heading	21	74.38	74.47	—	0.09
Stone (granite, marble, etc.)	10	62.10	68.87	+	5.77
Straw goods	5	78.00	85.00	+	7.00
Toys and games	5	66.20	85.00	+	18.80
Trunks and valises	9	90.56	86.77	—	3.79
Veneer	9	77.56	79.63	+	2.07
Wagons, carriages and sleighs	53	71.80	76.27	+	4.47
Woodenware	11	76.70	80.90	+	4.20
Woolen and worsted goods	17	73.29	72.94	—	0.35
Miscellaneous	13	72.88	72.08	—	0.78
All industries	1,499	71.80	75.64	+	3.84

TABLE XVII.—*Summary of all industries, with the increase or decrease in 1898.*

NUMBER OF ESTABLISHMENTS, PARTNERS, STOCKHOLDERS, ETC.	1897.	1898.	INCREASE + OR DECREASE — IN 1898.	
			No.	Per cen
Number of establishments	1,245	1,245	—	—
Number of private firms	625	612	— 13	— 2.08
Number of partners	1,325	1,073	— 252	— 19.01
Males	1,262	1,029	— 233	— 18.46
Females	63	44	— 19	— 30.15
Number of corporations	608	614	+ 6	+ 0.98
Number of stockholders	7,716	10,119	+ 2,403	+ 31.14
Males	6,769	8,531	+ 1,762	+ 26.04
Females	947	1,588	+ 641	+ 67.68
Aggregate: partners and stockholders	9,041	11,192	+ 2,151	+ 23.68

PERSONS EMPLOYED.

Average number	87,534	96,248	+ 8,714	+ 9.95
Smallest number	71,207	79,663	+ 8,456	+ 11.87
Greatest number	109,839	119,809	+ 9,970	+ 9.07
Excess of greatest over smallest	38,632	40,146	+ 1,514	+ 3.91

CAPITAL INVESTED.

	1897.	1898.	Increase or decrease in 1898
Total amount of capital invested	\$189,760,669	\$198,856,913	+ \$9,096,

STOCK USED—AGGREGATE VALUES.

Total value of stock used	\$98,130,070	\$112,680,185	+ \$14,550,
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GOODS MADE—AGGREGATE VALUES.

Total value of goods made or work done	\$169,946,673	\$192,070,633	+ \$22,123.
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PERSONS EMPLOYED—BY MONTHS.

MONTHS.	1897.			1898.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	66,992	8,554	75,546	74,293	9,963	84,256
February	68,966	8,794	77,760	75,979	10,344	86,323
March	71,252	9,246	80,498	79,212	10,807	90,019
April	77,969	9,524	87,493	86,906	11,099	98,004
May	82,573	9,749	92,322	90,232	11,171	101,403
June	83,232	9,500	92,732	90,455	11,425	101,880
July	82,315	10,015	92,330	90,115	12,175	102,290
August	82,131	10,436	92,567	90,206	12,112	102,318
September	82,383	10,295	92,678	90,082	11,172	101,254
October	83,147	9,826	92,973	88,016	10,979	98,995
November	78,557	9,561	88,218	85,810	10,809	96,619
December	73,806	9,454	83,259	80,794	10,809	91,593

WAGES AND EARNINGS.

	1897.	1898.	Increase + or decrease — in 1898.
Total amount paid in wages	\$36,583,044	\$40,320,703	+ \$3,737,659
Average yearly earnings	416.79	418.92	+ 2.13

CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897.					1898.				
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females un- der 18 years of age.	Total.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females un- der 18 years of age.	Total.
\$25.00 per wk. & over..	861	.....	.....	.....	861	926	.....	.....	.....	926
20.00 but under \$25.00..	1,674	.....	.....	.....	1,674	926	.....	.....	.....	926
15.00 but under 20.00..	1,632	.....	.....	.....	1,632	1,769	.....	.....	.....	1,769
10.00 but under 15.00..	3,860	.....	.....	.....	3,860	4,783	.....	.....	.....	4,783
7.50 but under 10.00..	4,194	.....	.....	.....	4,194	4,925	.....	.....	.....	4,925
5.00 but under 7.50..	7,156	.....	.....	.....	7,156	8,215	.....	.....	.....	8,215
2.50 but under 5.00..	3,193	78	.....	.....	3,271	3,284	88	.....	.....	3,372
1.00 but under 2.50..	6,117	74	.....	.....	6,191	6,871	93	.....	.....	6,964
Under 1.00..	14,357	118	.....	.....	14,475	17,673	138	.....	.....	17,811
.....	10,321	202	.....	.....	10,523	11,388	281	.....	.....	11,669
.....	14,633	307	133	61	15,134	15,994	288	112	25	16,419
.....	7,878	738	293	30	8,939	8,734	897	355	33	10,019
.....	1,516	386	215	11	2,127	1,408	763	240	7	2,418
.....	1,244	821	304	24	2,393	1,508	1,179	328	84	3,099
.....	1,135	1,471	1,474	164	4,244	1,277	1,766	1,247	110	4,400
.....	477	1,145	1,231	278	3,131	593	1,312	1,173	328	3,406
.....	401	1,394	433	2,451	243	1,380	1,577	437	3,637	.....
.....	135	823	2,051	772	3,781	76	692	2,459	897	4,124
.....	262	1,105	626	1,993	.....	281	1,123	1,006	2,409	.....
.....	201	676	403	1,280	.....	75	594	745	1,414	.....
.....	54	97	206	357	.....	17	211	346	574	.....
Under \$1.50	9	3	74	86	.....	.....	11	56	67	.....
Totals	80,605	7,090	8,976	3,082	99,753	91,456	9,250	9,430	4,073	114,209

PROPORTION OF BUSINESS DONE.

Proportion of Business Done and Days in Operation.	1897.	189.	Increase + or decrease — in 1898.
Average proportion of business done	71.80	75.64	+ 3.84
Average number of days in operation.....	270.81	283.60	+ 12.79

ANALYSIS.

The figures in the preceding tables of this part have been compiled from the returns of their business for 1897 and 1898, from 1,245 manufacturing establishments in this state. In the presentations the corresponding data for the two years are placed in comparison or arranged in such a way that the increase or decrease in each of the different elements in 1898 compared with 1897 is readily seen.

The tables are chiefly devoted to showing for each industry included, the number of private firms and corporations, the number of partners and stockholders, classified as to sex, the amount of capital invested, the cost value of the stock and supplies used, the total value of the goods made or work done, the total amount paid as wages, the average yearly earnings, the average, smallest and greatest number of persons employed, the number of persons employed by months, classified as to sex, the classification of weekly earnings, the average number of days in operation and the proportion of business done. In the tables for classification of weekly earnings the persons included are classified into: males 18 years of age or over, females 18 years or over, males under 18 years of age, and females under 18 years. The earnings for each of these classes are shown separately.

The condition of any business or industry is usually ascertained by comparing the volume of the business done and the elements employed. Thus, when from time to time, there is an increase in the output and in the capital or persons employed in the undertaking is said to be prosperous, or in a healthy condition. When, on the other hand, a decrease in this respect

noticed, it is usually considered less prosperous or on the decline. In order to know something about industrial conditions as a whole, definite and reliable information concerning the volume of the business and the various elements employed in it at different periods must therefore be had. The real purpose of these presentations is to furnish such information for the two years which are covered.

As said above the returns for each year were obtained from the same establishments. That the investigation should be confined to identical plants was absolutely necessary to the purpose in view. Had it been otherwise the results might have been of some interest because of the relations shown between the different elements, but they would have revealed nothing of the general tendency from a business point of view. This is too obvious for further explanation. The establishments included represent 66 per cent. of the productive capacity for the state. Regarding the conclusions to be drawn from the results it can perhaps be said that what is true of two-thirds of the establishments is likely to be true of all.

PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCKHOLDERS; BY INDUSTRIES.

In the foregoing presentations tables I and II show, by industries, in 1897 and 1898, the respective number of private firms and corporations, the number of partners and stockholders classified as to sex, and the increase or decrease in each case, in 1898 as compared with 1897. The value of the facts thus presented in the above tables may not at first be fully apparent. Standing alone it is also true that they have no direct bearing upon the condition of the industry and therefore do not seem to have any relation to the main purpose of this investigation. On the other hand, they reveal the methods of management of the various enterprises and consequently constitute a part of essential facts to a full understanding of the industrial world. In both organization and management corporations differ greatly from the old style firm or partnership. As to which one of these two methods management is the best from a social point

of view is an open question which no attempt has been made to explain. The figures merely show the number each year, and the comparisons made simply measure the changes which took place during the period. Facts that show the method most commonly resorted to and the extent to which it is displacing the other method from time to time, are certainly of ordinary interest. It is also important to know whether, in number, partners and stockholders tend to increase or decrease. Without these facts it would be impossible to say whether the tendency is toward a concentration of ownership or not. By covering all the points the facts presented are of considerable importance and deserve further analysis.

The following table shows the number of private firms and partners for 1897-98, respectively:

Private firms and partners.

YEARS.	Number of firms.	PARTNERS.		
		Male.	Female.	Total.
1897.....	632	1,276	63	1,339
1898.....	620	1,042	47	1,089

We see from above presentation that of the whole number reporting, the number of private firms was 632 for 1897, and 620 for 1898. There was thus an decrease of 12, or 1.9 per cent. This means that 12 private firms changed system of management from private firms to corporations.

For 1897 the total number of partners was 1,339. Of this 1,276 or 95.3 per cent. were males and 63 or 4.7 per cent. females. For 1898 the total number of partners was 1,089. Of these 1,042 or 95.5 per cent. were males and 47 or 4.5 per cent. females.

Comparing the number of partners for the two years we find

That the males changed from 1,276 to 1,042; a decrease of 234 or 18 per cent.

That the female partners changed in number from 63 to 47 a decrease of 16, or 25.4 per cent,

That the total number of partners changed in number from 1,339 to 1,089 ; a decrease of 250, or 18.7 per cent.

While numerically the decrease was much greater for the male partners, the relative decrease was greater for females.

Of the total decrease of 250 partners 234, or 93.6 per cent. were males, and 16, or 6.4 per cent. females.

The decrease in the number of partners is further illustrated by the fact that in 1897 the average number to each firm was 2.12, while in 1898 it was only 1.76.

In the next table is presented the number of corporations and stockholders for each of the two years covered :

Corporations and stockholders.

YEARS.	Number of corpora- tions.	STOCKHOLDERS.		
		Males.	Females.	Total.
1897.....	613	6,905	967	7,872
1898.....	625	8,671	1,613	10,284

Of the whole number of establishments making returns, we find from the above presentation that the number of corporations was 613 for 1897, and 625 for 1898. This is an increase in the number of those who changed their mode of management from private firm to corporation, of 12, or 1.96 per cent.

As to the relative number of male and female stockholders it is seen, that, of the 7,872 stockholders for 1897, 6,905, or 87.7 per cent. were males, and 967, or 12.3 per cent. females ; that of the 10,284 stockholders in 1898, 8,671, or 84.3 per cent. were males, and 1,613, or 15.7 per cent. were females.

As to the number of stockholders for the two years it appears, first, that the males changed from 6,905 to 8,671, this is an increase of 1,766, or 20.4 per cent. ; second, that the number of females changed from 967 to 1,613, which is an increase of 646, or 67 per cent. ; third, that the total number changed from 7,872 to 10,284, being an increase in number of 2,412, or 30.6 per cent. There was thus an increase in number for each sex as well as in the total number.

As the increase in number of male stockholders is represented

by 1,766 and for females by 646 the numerical is greater in the former, when it comes to the proportional increase, however, this is reversed. This is seen from the fact that the increase for the males was 20.4 per cent., while for females it was 26.8 per cent.

Of the total increase of 2,412 persons as stockholders, 1,766, or 73.2 per cent. were males, and 646, or 26.8 per cent. females.

The increase in the number of stockholders may be further illustrated by showing the average number to each establishment. In 1897, 613 establishments had 7,872 stockholders, an average of 12.8. In 1898, 625 establishments had 10,160 stockholders, or an average of 16.3 to each.

From this analysis it thus appears that during the two year period the following changes in the methods of business management and in partners and stockholders took place:

The number of private firms decreased by 12 and the number of corporations increased by the same number. The number of male partners decreased 18 per cent., while the male stockholders increased 20.4 per cent. Female partners decreased 25.4 per cent., while female stockholders increased 67 per cent. The total number of partners of both sexes decreased 18.7 per cent., while the total number of stockholders increased 30.6 per cent.

In the following presentation is found, separately for each year, the total number of establishments reporting and the combined number of partners and stockholders:

Establishments reporting partners and stockholders.

YEARS.	Private firms and corporations.	PARTNERS AND STOCKHOLDERS.		
		Males.	Females.	Total.
1897.....	1,245	8,181	1,030	9,211
1898.....	1,245	9,713	1,660	11,373

We see from this that the total number of establishments including both private firms and corporations—which is reported for 1897 and 1898 is the same for each year, or 1,245.

Taking up the male partners and stockholders we find together they number 8,181 in 1897 and 9,713 in 1898.

is an increase of 1,532, or 18.7 per cent. As to the female partners and stockholders it is seen that they numbered 1,030 in the former and 1,660 in the latter year, an increase of 630, or 61.2 per cent. The total number of both male and female partners and stockholders are found to be 9,211 for 1897, and 11,373 for 1898. As a whole this indicates an increase of 2,162, or 23.5 per cent.

The facts thus developed show that while there was a decrease in the number of private firms and partners, this decrease was more than balanced by the increase in the number of stockholders. As far as the manufacturing interests of this state are concerned there has thus been a diffusion of ownership during the past year. In other words more people are interested in them as stockholders or owners today than one year ago. The immediate reason for this is likely to be found in the fact that, owing to the general prosperity, stock, which before was held by the organizers or in the treasury, has found a profitable market and thus met with a greater distribution through the regular channels of business.

This relative increase also appears in the averages. Thus it is found that the number of partners and stockholders combined averaged 7.4 persons to each establishment in 1897 and 9.1 persons in 1898.

The proportion of male and female partners and stockholders when the two classes of investors are taken together stood as follows: For 1897 the total number was 9,211. Of these 8,181, or 88.82 per cent. were males and 1,030, or 11.18 per cent. females. For 1898 the total was 11,373 and of these 9,713 or 85.4 per cent. were males and 1,660, or 14.6 per cent. were females.

As a whole these figures or facts indicate that there is a marked tendency from the individual to the corporate management of industries in the manufacturing line.

In connection with the foregoing presentations a few facts mentioned in the foot notes to tables I and II should be borne in mind. It was there seen that for 1897, seven private firms and five corporations, that for 1898, eight private firms and eleven corporations failed to report as to partners and stockholders,

and that for these reasons these 31 establishments were not included in those tables. In the above analysis, however, the missing figures were supplied. The partners and stockholders were arrived at on the basis of the averages for all. As the establishments from which they were omitted, judging from the production and the number of hands employed, seemed to correspond closely to what might fairly be regarded as an average plant in this state. The figures thus supplied are considered safe, or practically correct.

CAPITAL INVESTED.

By capital invested in this case is meant, first, the value of land, buildings, fixtures, and machinery of all kinds actually employed in production. Second, the cost value of all raw materials on hand on the first day of the business year. Third, all cash capital employed, whether owned or borrowed. The facts were obtained from each establishment included. The total amount of capital employed in 1897 and 1898 by each industry as classified is shown in table III of this part.

The main purpose of obtaining this data was to ascertain the total amount of capital employed each year, and thus, by comparisons, ascertain whether there was an increase or decrease in 1898. Statistics of capital are also interesting for other reasons. When, as in the present case, they are collected in connection with the data of other elements of production, valuable comparisons are possible. Thus the relation between the amount of capital used and the value of the output and amount paid as wages may be readily ascertained. Relations of this nature often throw much light upon industrial organization. Facts from which they may be determined are therefore of great value.

By some statisticians statistics of capital employed are regarded as of little value. Many reasons are assigned for this. The one mostly given, however, is that reliable data of the capital invested in manufacturing cannot be obtained. Without entering into this contention in detail attention may be called to a number of facts which would seem to indicate the situation is by no means

as serious as this. It is true that there are many items in the amount invested that cannot be told off hand. It is also true that the manufacturers, as a rule, are much averse to reporting facts concerning their investments. This, however, does not prove the undertaking impossible. Where even fairly complete books are kept there are at least three ways in which the value of the plant, as it stands, may be ascertained. The first of this is the original cost; the second is the amount for which it could be reproduced; third is to capitalize its earning power. The first method may not be exactly clear as investment and depreciation may have been confounded. Obstacles of this kind can usually be removed by a little explanation. The second method is certainly feasible. Few manufacturers are unable to estimate the cost of renewing their plant. The third way, that of capitalizing the earning power of a plant is perhaps the simplest way of all. It is often resorted to, but to make the earnings for any particular year the basis might be misleading. For statistical purposes the capitalizing of the average earning would be preferable. Of these methods the second was employed for these reports, while the facts wanted were not always readily obtained, it can be said that we hardly met with a single manufacturer who insisted he could not tell the amount of his investment. By making it clear that the facts furnished would not be used to their detriment it is usually also possible to overcome such objections to reporting as arise from fear of publicity. Such items as raw material, cash and credit, capital, etc., are sometimes misunderstood. Any confusion from this source can usually be prevented by a full explanation of what these terms stand for. For instance, if by credit capital is understood the excess of the amounts owed over the amount owed them, the question becomes reasonably clear. More depends upon the manner in which the request for such data is presented than upon the ability of employers to furnish it. Skill and tact on the part of those who are collecting them usually brings correct returns. This, it is believed, is only common experience.

Concerning inquiries about capital such as the ones outlined above, it has been said that they are not broad enough to cover

all the means of production which properly come under capital and that for this reason the answers do not show what is claimed for them. In a certain sense these objections are well taken. As alluded to already, it is no easy matter to reach everything that may be included in the capital invested. The main reason for this is the numerous forms which capital is made to assume. In practically every establishment there are certain both tangible and intangible means of production that escape notice and which if classed as capital will be omitted from the schedules. The statement that the inquiries, as a whole, are too narrow may therefore be admitted. On the other hand it is equally true that the capital thus left out is insignificant in amount. A most careful investigation would reveal that in any case it cannot foot up to more than a very small percentage of the total investment. It will also be found that the capital which thus escapes notice consists mostly of such means as are not to any appreciable extent affected by the addition or withdrawal to or from the original investment, or by changes in business condition. The schedule covered all the important items into which the investment can usually be divided and which reflects the ups and downs in the business. Considering all this, and also the fact that inquiries are the same from year to year, it is only fair to assume that the data of capital presented here show all that is claimed for it.

The following table shows for twelve of the leading industries for other industries and for all industries, the amount of capital invested by the establishments included in 1897 and 1898, together with the amount and percentage of increase or decrease in 1898 as compared with 1897:

Capital invested.

INDUSTRIES.	No. of establishments considered.	AMOUNT OF CAPITAL INVESTED.		INCREASE + OR DECREASE - IN 1898.	
		1897.	1898.	Amounts.	Per cent.
Agricultural implements	31	\$7,826,158	\$10,968,413	+ \$3,142,255	+ 40.15
Boots and shoes	24	1,900,423	2,309,118	+ 408,695	+ 21.50
Chairs	13	3,835,742	3,890,880	+ 55,138	+ 1.43
Furniture	42	2,776,295	3,114,440	+ 338,145	+ 12.17
Lager beer	71	35,539,091	36,702,044	+ 1,162,953	+ 3.27
Leather	33	12,124,012	14,082,305	+ 1,958,293	+ 16.15
Lumber, lath and shingles	168	45,642,002	39,945,332	- 5,696,670	- 12.43
Machines and machinery	86	9,038,030	11,396,566	+ 2,358,536	+ 26.09
Paper and pulp	34	9,014,723	11,570,568	+ 2,555,845	+ 28.35
Sash, doors, blinds and mouldings	73	5,541,357	5,495,819	- 45,538	- 0.82
Sheet metal goods	26	2,673,622	2,856,572	+ 182,950	+ 6.84
Wagons, carriages and sleighs	53	5,288,915	5,924,195	+ 635,280	+ 12.01
Other industries	591	48,560,299	50,600,673	+ 2,040,374	+ 4.21
All industries	1,245	\$189,760,669	\$198,856,913	+ \$9,096,244	+ 4.79

According to above table the capital invested in 1897 and 1898, in the establishments included amounted to \$189,760,669 and \$198,856,913, respectively. As compared with the preceding year there was thus an increase for 1898 of \$9,096,244, or 4.79 per cent.

The table shows that 1,245 establishments are included. As seen already these were classified in 46 industries. In the above table twelve of the leading industries are presented separately, while the 34 remaining industries appear under the head of other industries. Comparing the twelve industries with other industries, with respect to the number of establishments included, we find that the former, together, show 654 or 52.5 per cent. of the total, while the latter only embraces 591 or 47.5 per cent. of the establishments. Comparing the twelve industries and other industries with regard to the capital invested it is found that in 1897 the former show \$141,200,402 or over 74 per cent. of the total, while other industries show \$48,560,299 or only 26 per cent. of the total; and that in 1898, the twelve industries show \$148,256,240 or 77 per cent., while other industries show only \$50,600,673 or 26 per cent. of the total amount invested. For 1897; 52.5 per cent. of the establishments represented show 74 per cent. of the capital invested. In 1898 the same establishments represented 77 per cent. of the

capital, a gain upon other industries of 3 per cent. The figures indicate the relative importance of the various industries in the amount of capital represented. A study of the capital invested in connection with other elements, such as the product and wages paid, would throw much light upon the relation of these elements and the proportion of each that is found necessary to carry on the business in the different industries.

Of the twelve leading industries, eight show an increase and two a decrease in the amount of capital used. With reference to the amount of the increase, the order for those showing larger investment for 1898 than for the preceding year stands as follows: Agricultural implements, paper and pulp, machinery, etc., boots and shoes, wagons, carriages and sleighs, furniture, sheet metal goods, and chairs. A close examination of the returns with this end in view points strongly to the fact that the increase of capital in these cases was the natural result of the expansion of business.

The two industries showing a decrease in the amount of capital employed in 1898 as compared with 1897 were lumber, lath and shingles and sash, doors and blinds. With regard to lumber, lath and shingles the situation is somewhat peculiar. The lumber industry is on a steady decline in this state. The reason for this is that the sources of raw material or timber are rapidly exhausted. A large proportion of the establishments which reported for this presentation were going out of business at the end of the year. In looking over the returns it was plainly noticed that those which were going out of business reported a much smaller capital for 1898 than for 1897, although their output was in many cases fully as large as for the previous year. That under such circumstances a decrease in capital should take place is fully in accordance with fact. Preparatory to going out of business the plant is usually kept up, less money is also required for material and other expenses. In other words, the capital is withdrawn as rapidly as possible. The figures in this respect only correspond to common observation.

The sash and door industry, the other of the two industries showing a decline, may have been somewhat affected by

decline in the lumber industry. It need hardly be mentioned *that* these two industries are closely allied, the product of the one being largely the raw material of the other. The returns, however, did not fully reveal whether the decline in lumber had as yet had any effect upon the business of sash and door plants, but they appeared to show a tendency in this direction. During 1898 the wood working industries in this state were subjected to strikes and other troubles of this kind, and it is not unlikely *that* this fact might have resulted in a tendency for at least a temporary withdrawal of capital. As a whole, the decrease in the capital, whatever the causes, was very slight, being less than one per cent.

Going back to Table III, which shows for each of the industries included the amount of capital used in 1897 and 1898, we find that of the 46 industries given, 36 show an increase and 10 a decrease in capital for the latter year. The proportion showing an increase is large, which on the whole ought to mean a healthy condition of our industries. A small decline in the capital, however, does not always mean a smaller output. This is plainly illustrated in the tables. We see there that there are several cases where a slight reduction in capital and a small increase in the value of the product are found for the same industry. Where such variations are small, as is the case here, they are of little significance and probably in most cases due to the fact that the value or price of the products has increased faster than the cost of the raw material entering into these products.

STOCK USED.

By stock is meant the material and supplies used during the year, or which entered the annual product. The material usually called raw material consists of the goods which through the application of labor and machinery are transformed into other goods. Supplies consist of coal, gas, power, oils, such as are used or must be had in all manufacturing establishments. It also includes packing boxes or barrels,—in fact, supplies of all kinds. The total cost value of all such materials and sup-

plies used for each industry for the years 1897 and 1898 are presented in Table IV.

The principal value of statistics of this nature is, perhaps, from their economic importance. They are also valuable from the fact that, collected in connection with the value of the products they act as a sort of a check upon the returns, or as a basis for guidance through which errors in the schedule can be much more easily detected.

When the questions in the schedule are specific, or the information desired so fully pointed out that there can be no misunderstanding regarding it, little or no difficulty should be experienced in obtaining correct data of the kind described here. Especially should this be true in all cases where even fairly complete records are kept. Regardless of these facts, complete data of the material used is not always easily obtained. The chief reasons for this are usually found with the employers themselves. As a rule, employers are averse to give facts which may reveal their profits, or tend to do this. As the raw material or stock used constitutes one of the chief elements of their expense, it is therefore readily seen how it might happen that the figures reported might not correspond to the facts, even when no particular objection is raised to reporting. By this is not meant that we have met with a large number of such instances, for the proportion who tried to mislead in this way is not great. Attention is simply called to this fact because it furnishes an example of the means sometimes resorted to in order to cover up the facts. Numerous other sources of error could also be mentioned. Enough has been said to show the trend and that all the factors bearing upon the results have been considered. On the whole, the experience obtained from handling such returns from year to year is a safeguard in itself. In the careful editing to which returns were subjected there was small chance for any error to find its way into the final result. Such editing, however, means a great deal of labor, and usually results in many additional requests for correct data. But it is the only way in which correct results can be obtained. These facts are mentioned in order to show the amount of care exercised and the steps taken to avoid errors.

The cost value of the raw material and supplies used for the years included will be found in the following table:

Stock used.

INDUSTRIES.	No. of establishments considered.	VALUE OF STOCK USED.		INCREASE + OR DECREASE — IN 1898.	
		1897.	1898.	Amounts.	Per cent.
Agricultural implements	31	\$2,174,798	\$2,298,622	+	\$123,824 + 5.69
Boots and shoes	24	1,983,766	2,102,769	+	118,994 + 5.99
Chairs	13	1,077,342	1,149,372	+	72,030 + 6.68
Furniture	42	1,333,503	1,681,650	+	348,147 + 26.10
Lager beer	71	3,702,671	4,071,409	+	368,732 + 9.95
Leather	39	11,320,816	11,983,276	+	662,460 + 5.85
Lumber, lath and shingles	168	12,187,522	13,193,042	+	1,005,520 + 8.25
Machines and machinery	86	3,333,014	3,986,147	+	653,133 + 19.65
Paper and pulp	34	3,481,577	5,086,289	+	1,604,711 + 46.09
Sash, doors, blinds and moulding	73	2,879,007	2,839,626	—	39,381 — 1.36
Sheet metal goods	26	1,898,543	2,005,382	+	106,839 + 5.62
Wagons, carriages and sleighs	53	2,116,750	2,491,797	+	375,047 + 17.71
Other industries	591	50,640,761	59,788,820	+	9,148,059 + 18.06
All industries	1,245	\$98,130,070	\$112,680,185	+	\$14,550,115 + 14.82

The above table is essentially a table of comparisons. For the twelve industries which have been selected for comparisons, and for all the other industries combined, as well as for all industries,—comprising in all 1,245 establishments,—the table shows separately, for 1897 and 1898, the cost value of all the material and supplies which entered into the products of these years. It also shows, for each of the classifications given, the increase and decrease in the cost value of the raw material and other articles used, together with the percentages in each case.

Taking the figures for all industries, that is, for the 1,245 establishments, we find that the cost value of materials and supplies footed up to \$98,130,070 for 1897, and \$112,680,185 for 1898. Comparing these it appears that the excess for the latter year was \$14,550,115. As between the two years this means an increase in 1898 of 14.82 per cent. This increase is mainly due to a general expansion of business.

In 1897 the value of materials and supplies used thus amounted to \$98,130,070. Of this amount, \$47,489,309, or 48.4 per cent., comes under the 12 classified industries, and \$50,640,761, or 51.6 per cent., under "other industries."

In 1898 the cost value of all the materials and supplies used was \$112,680,185. Of this amount, \$52,891,365, which is 46.8

per cent. of the whole, comes under the 12 classified industries, or those named; and \$59,788,820, or 53.2 per cent., under "other industries."

The increase for 1898 over the previous year was \$14,550,115, or 14.82 per cent. Of this amount \$5,402,154, or 37.8 per cent., was for the 12 industries, and \$9,148,059, or 62.2 per cent., for "other industries." The increase for "other industries" was thus much greater in proportion than for those given separately. This is made particularly plain when these figures are compared with those given above.

Only one industry among the twelve which are presented in above table,—that of sash, doors and blinds,—shows a decline. The decline in this case, however, is very small, being only a little over one per cent. As a whole, this industry shows no particular strength over the previous year, the output being only a trifle larger.

Going back to Table IV, where the figures for 1897 and 1898 for each of the 36 industries are given in detail, we find that of this number only 7 show a decline in the value of the materials and supplies used. In many of the industries the business for the two years was so nearly the same that any variation was more likely to be due to changes in prices of raw materials and products than to the quantity used or turned out. As a matter of fact, the greatest drawback to satisfactory manufacturing statistics of this kind comes from fluctuation in prices.

VALUE OF GOODS PRODUCED.

By the value of the goods produced is, in this connection, meant the total market value of all the goods made or work done during 1897 and 1898 by the establishments included. Data bearing upon the value of the output was, of course, collected at the same time and under the same circumstances as the other facts presented in this part, and the facts appearing under this head form a part of the general plan. The details, as far as given, are presented in table V. In conformity with the other presentation, this table embraces the facts for the 1,245 establishments, classified into 46 industries, which made returns

for both years. As it stands, the table shows, by industries, and separately for 1897 and 1898, the total value of the goods produced, together with the increase or decrease as the case may be for the later year.

No facts relating to manufactures are of greater importance, from a statistical point of view, than such as show the annual output. This is true whether these facts stand alone, or are used in connection with other facts. Standing alone, they show not only the gross income in our manufacturing industries, but collected upon the proper plan and from time to time they can also be made to measure the growth or decline of these industries.

Taken together with other facts, such as the amount of capital used, the respective amounts paid for raw material, wages, salaries, and other expenses, the total value of the product will enable many valuable and interesting comparisons. Thus it can be shown, for instance, the amount of capital required to turn out a given product. It will also make calculations possible of the proportion of the various items of expense which are necessary in order to obtain the product. If the figures are accurate and given in sufficient detail it will also reveal the relative earnings or share in the product of the various factors which have contributed.

It is true that owing to fluctuations in prices, the market value of the goods made is an uncertain standard of measurement. When prices are low a greater quantity of products is certainly required to make up a certain value than when prices are high. The only absolutely true way to measure the development of any industry would therefore be by the quantity and quality of its products. Correct data of the quantity alone, leaving the quality out, are entirely out of the question. The products are of such a variety both as to nature and worth that not even a thought of measuring them in this way can be entertained. Since absolute data cannot be had, the next best method must be resorted to, if there is to be any measurement at all; and the best method practicable is to obtain the money or market value of the products. This is the only one in general use, in fact, the only way in which even any approximate figures as to the

output can be had. While there are ups and downs in the market, other conditions involved also change. Barring fluctuations of short duration, the general movements in value are gradual and slow. On the whole, the market value of commodities cannot be said to be wholly misleading. In many cases, at least, it undoubtedly in the long run coincides very closely with the quantity. As to the proportion of the different elements of expense it is not likely that it is greatly affected by the fluctuations in value of the products. Higher prices of products are generally followed by higher prices of raw material and higher wages. Of course all the factors do not move precisely at the same time; but the general tendency is in the same direction.

The value of the products or the goods made in 1897 and 1898 is shown in the following presentation:

Total value of goods made and work done.

INDUSTRIES.	No. of establishments considered.	VALUE OF GOODS MADE AND WORK DONE.		INCREASE + OR DECREASE - IN 1898.	
		1897.	1898.	Amounts.	Per cent.
Agricultural implements	31	\$4,242,134	\$5,884,207	+ \$1,592,073	+ 37.55
Boots and shoes	24	3,416,422	3,685,647	+ 278,625	+ 8.15
Chairs	13	2,494,412	2,918,343	+ 423,931	+ 16.99
Furniture	42	2,776,577	3,200,298	+ 423,721	+ 15.26
Lager beer	71	16,946,217	17,244,845	+ 299,628	+ 1.76
Leather	33	15,153,361	15,873,458	+ 720,097	+ 4.75
Lumber, lath and shingles	168	22,043,162	24,682,967	+ 2,639,805	+ 11.97
Machines and machinery	86	8,155,581	9,787,484	+ 1,631,903	+ 20.00
Paper and pulp	34	6,555,806	8,519,311	+ 1,963,505	+ 29.95
Sash, doors, blinds and moulding	73	5,260,706	5,298,430	+ 37,724	+ 0.71
Sheet metal goods	26	3,376,417	3,483,993	+ 107,576	+ 3.18
Wagons, carriages and sleighs....	53	4,256,259	4,957,053	+ 700,794	+ 16.46
Other industries	591	75,270,619	86,575,197	+ 11,304,578	+ 15.01
All Industries	1,245	\$169,946,673	\$192,070,633	+ \$22,123,960	+ 13.01

The preceding presentation, as explained elsewhere, is made up of the returns of 1,245 establishments which were classified into 46 industries. In the table as it stands, however, only 12 of the leading industries are presented separately. The remaining 34 industries are grouped under "Other Industries."

As it stands, the above table thus shows, for each of the twelve industries given separately, for all those grouped under other industries and for all industries included, the total value of the goods made or work done in 1897 and 1898.

Taking the table as a whole, we find that the 1,245 establishments turned out products which were valued at \$169,946,673 and \$192,070,633, in 1897 and 1898 respectively. The product for 1898 was thus of greater value than that for 1897. The difference in favor of the latter year was \$22,123,960, an increase of 13.01 per cent.

As said, the figures for 12 out of the 46 industries are given separately, while those for the remaining 34 are included in one amount under "Other Industries." An examination of the figures will readily show that those given separately embrace the more important or leading industries in the state, and this is the main reason why they are given greater prominence. Of the 1,245 establishments, 654, or 52.53 per cent., are embraced by these 12 industries; 26 per cent. of the industries thus comprises over 525 of the establishments.

In 1897 the total output was valued at \$169,946,673. Of this amount, \$75,270,619, or 44.3 per cent., was produced by those classified as "Other Industries."

In 1898 the total output was valued at \$192,070,633. The product of those which are classified under "Other Industries" amounts to \$86,575,197, or 45.1 per cent. of the total.

From these facts it follows that 47.4 per cent. of the establishments turned out 44.3 per cent. of the product of 1897, and 45.1 per cent. in 1898. This variation is also in a measure borne out by the relative proportion of capital used and the value of stock consumed.

Going back to Table V where the value of the goods produced in each of the 46 industries for the two years, together with the increase and decrease for 1898 are shown, we find that only five of the whole number of industries included show a decline in the latter year. The industries in which business thus seems to have been dull are: Burial cases, etc.; cotton and linen goods; paints, ails, etc.; staves, etc., and stone, etc. In burial cases, etc., the decline amounted to 27.4 per cent.; in paints, etc., to 20.9 per cent.; in staves, etc., 10.75 per cent.; in cotton and linen goods, 6.73 per cent.; in stone, etc., 2.4 per cent. In two industries, therefore, the decline exceeds 20 per cent.; in the other three it runs from a little over 10 to 2.4 per cent.

The industries in which this decline took place are not among the most important to the state. Considering this and also the fact that there was a net increase for all of over 13 per cent., it is evident that the declines mentioned did not materially affect the general business situation.

Considering all the facts which have thus been presented, it becomes evident that the industrial situation throughout 1898 showed considerable improvement over the previous year. It is true that five industries indicate a decline. But on the other hand, 41 industries showed a very decided increase. The industries showing a decline were not only fewer from a numerical point of view, but even of less importance when the number of establishments is taken into account. Thus the five industries showing a decline are represented by 47 establishments, while showing an increase include 1,198 establishments. These figures are a fair indication of the relative importance of these two classes of industries from a business point of view and show an unmistakable tendency in the industrial condition for the period covered.

PERSONS EMPLOYED.

In regard to the number of persons employed the data collected was of such a nature as to show the average number employed and the respective number during the periods when the smallest and greatest number were employed, as well as the number employed by months.

These facts, by industries and covering 1897 and 1898, are chiefly presented in tables VI to XI inclusive. Thus, tables VI and VII show the average, smallest, and greatest number of persons employed. Table VIII shows the excess of the greatest over the smallest number of persons in 1898 as compared with 1897. Tables IX and X show the average number of persons to each establishment at the different periods of employment; and table XI, which covers several pages, gives the number by months.

The main purpose of presenting these figures is to show the condition as to employment in the manufacturing industries

in the state. How far this condition is revealed may be a question. So far as could be learned the figures obtained were approximately correct. The proportion of establishments represented is also sufficient for representative data from a statistical point of view. The method itself may not be the best, but has been tried, and was the only one feasible under the circumstances under which the data were obtained. It was not intended that the data should apply to the state as a whole, or all industries in the state. It is confined to manufacturing only. For the larger proportion of the establishments the data shows, not only the number employed by month, but at the highest and lowest period of employment. Considering these facts and the circumstances connected with them, the conclusion would seem supported that as far as manufacturing goes, the basis is not only safe but sufficient for the purpose in view.

It will be noticed that there is a difference between the tables relating to system of management, capital stock, and goods made, and those which relate to persons employed, wages, proportion of business done and days in operation, in the number of establishments included. In the former presentation 1,245 establishments are included, while the latter shows 1,499 establishments, or 154 more than the former. The reason for this is due to the fact that the number reporting as to the latter facts was greater. Information as to the mode of management, capital, stocks and products was only obtained from the more representative industries, while data as to persons employed was obtained from employers in practically all industries whether, strictly speaking, they come under manufactures or not. The additional establishments in the latter case, however, have been classified separately into 12 industries and can therefore be treated alone without much extra trouble.

In the analysis of the persons employed attention is given, first, to the average, smallest, and greatest number employed; and second, to the number employed by months. This seems to be their logical order as well as the order in which the data is presented in the report.

The following presentation, which is the first in order, is devoted to average number of persons employed during 1897 and

1898, and the increase or decrease in number and percentages for the latter year as compared with 1897.

INDUSTRIES.	Number of establishments.	AVERAGE NUMBER OF PERSONS EMPLOYED BOTH SEXES.		INCREASE + DECREASE - 1898.	
		1897.	1898.	Number.	Per cent.
Agricultural implements	31	1,866	2,454	+	588 + 31.51
Boots and shoes	24	2,269	2,446	+	177 + 6.36
Chairs	13	3,091	3,485	+	394 + 12.74
Furniture	42	2,441	2,681	+	240 + 9.83
Lager beer	71	3,108	3,050	-	58 - 1.86
Leather	33	4,754	4,643	-	111 - 2.33
Lumber, lath and shingles	168	11,827	12,651	+	824 + 6.96
Machines and machinery	86	4,486	5,159	+	673 + 15.00
Paper and pulp	34	3,152	3,527	+	375 + 11.89
Sash, doors and blinds	73	3,507	3,381	-	126 - 3.59
Sheet metal goods	26	2,042	2,135	+	93 + 4.55
Wagons, carriages and sleighs	53	2,370	2,589	+	219 + 9.24
Total 12 industries	654	44,943	48,201	+	3,258 + 7.24
Other industries	845	42,591	48,047	+	5,456 + 12.81
All Industries	1,499	87,534	96,248	+	8,714 + 9.95

The preceding table shows, for the 12 itemized industries, separately and as a whole, for other industries, and for all industries, the number of establishments included, the average number of persons employed in each case, in 1897 and 1898, the increase and decrease in number and percentage in 1898 as compared to 1897.

For the 1,499 establishments the average number of persons employed was 87,534 in 1897, and 96,248 in 1898. There was thus an increase in the latter year of 8,714 persons, which sum is equivalent to about 9.95 per cent.

Of the 1,499 establishments, 654, or 43.63 per cent., are in the 12 industries, and 845, or 56.37 per cent., for other industries.

As to the average number of persons for 1897 we find that 44,943, or 51.34 per cent. of the total were for the 12 industries, and 42,534, or 48.66 per cent., were in other industries. For 43.63 per cent. of the establishments 51.34 per cent. of the persons, when the average number was employed, were thus found.

In 1898 the 12 industries with 43.63 per cent. of the establishments show 50.08 per cent. of the persons employed; while other industries, embracing 56.37 per cent. of the establishments,

show 49.98 per cent. of the persons. The range in this respect is also illustrated by the increases in 1898. Thus we see that the increase for all industries was 8,714 persons, and that of this, the increase for other industries was 5,456, or 62.5 per cent., while that for the 12 industries was 3,258 persons, or 37.50 per cent. On the whole, therefore, the range was narrower for the 12 than for other industries, which means that the employment in the former case was more steady throughout the year than for the latter.

In the next table we find, for 1897 and 1898, the smallest number of persons employed, or the number at the period when the smallest number of persons were employed.

INDUSTRIES.	Number of establishments	SMALLEST NUMBER OF PERSONS EMPLOYED BOTH SEXES.		INCREASE + DECREASE - 1893.	
		1897.	1898.	Number.	Per cent.
Agricultural implements	31	1,568	2,226	+ 658	+ 42.02
Boots and shoes	24	2,186	2,298	+ 112	+ 5.12
Chairs	13	2,992	3,029	+ 37	+ 1.23
Furniture	42	2,205	2,454	+ 249	+ 11.29
Lager beer	71	2,984	2,874	- 110	- 3.68
Leather	33	4,201	4,224	+ 23	+ .54
Lumber, lath and shingles	168	5,196	6,513	+ 1,328	+ 25.56
Machines and machinery	86	4,201	4,770	+ 469	+ 11.16
Paper and pulp	34	2,893	3,226	+ 333	+ 11.51
Sash, doors, blinds and moulding ..	73	2,788	2,872	+ 84	+ 3.01
Sheet metal goods	26	1,833	1,884	+ 51	+ 2.78
Wagons, carriages and sleighs	53	2,193	2,244	+ 51	+ 2.32
Total 12 industries	654	35,239	38,614	+ 3,375	+ 9.57
Other industries	845	35,968	41,049	+ 5,081	+ 14.12
All industries	1,499	71,207	79,663	+ 8,456	+ 11.87

In the preceding table we find for the 12 industries, other industries, and all industries, the number of persons employed, at the period in which the smallest number were employed in 1897 and 1898; also the increase or decrease as the case may be in the latter year as compared with the former.

Taking all industries we find that in 1897 the smallest number employed was 71,207, and that in 1898 it was 79,665. In 1898 the smallest number was thus 8,456, or 11.87 per cent. greater than for the preceding year. The differences between the two years throughout this table do not vary very much from those in the table for the average number. Both presentations convey about the same ideas as to the conditions of employment

and the improvements in same in the latter year. The greatest number of persons employed, or the number employed during the busiest week, in each year, will be seen in the next presentation in order.

INDUSTRIES.	Number of establishments.	GREATEST NUMBER OF PERSONS EMPLOYED BOTH SEXES.		INCREASE + DECREASE - 1898	
		1897.	1898.	Number.	Per cent.
Agricultural implements	31	2,386	3,296	+ 900	+ 37.72
Boots and shoes	24	2,457	2,552	+ 95	+ 3.86
Chairs	13	3,319	3,731	+ 412	+ 12.41
Furniture	42	2,838	3,132	+ 294	+ 10.39
Lager beer	71	3,352	3,259	- 93	- 2.70
Leather	33	5,329	5,177	- 152	- 2.85
Lumber, lath and shingles	168	19,706	19,898	+ 192	+ 0.97
Machines and machinery	86	5,256	5,783	+ 527	+ 10.02
Paper and pulp	34	3,716	3,826	+ 110	+ 2.96
Sash, doors, blinds and moulding ..	73	4,015	4,214	+ 199	+ 4.96
Sheet metal goods	26	2,239	2,344	+ 105	+ 4.68
Wagons, carriages and sleighs	53	2,641	2,963	+ 322	+ 12.19
Total 12 industries	654	57,254	60,165	+ 2,911	+ 5.08
Other industries	845	52,585	59,644	+ 7,059	+ 13.42
All industries	1,499	109,839	119,809	+ 9,970	+ 9.07

We see from the above table that for all industries, or the 1,499 establishments, the greatest number of persons employed during any one week was 109,839 in 1897, and 119,809 in 1898. The increase in 1898, as compared with the preceding year, was thus 9,970, or 9.07 per cent.

For the 12 industries which are given in detail, the difference between the two years in total greatest number employed is only 2,911. This number is in favor of 1898 and shows that for that year there was an increase for these industries of 5.08 per cent. For other industries the increase in 1898 is from 52,585 to 59,644, or 13.42 per cent. Comparing the increase for the 12 industries with that for other industries it is found that the latter shows the greatest figure. This fact also undoubtedly indicates that the fluctuation in employment was smaller in the 12 industries than for other industries.

As to the difference between the greatest number employed in 1897 and 1898 in the 12 leading industries there is, of course, great variations. Thus we find that in 10 of these industries the difference was greater in 1898 than in 1897, and that in two,—lager beer and leather,—it was smaller. Among those

in which it was greater it varies from less than one per cent. in lumber, to nearly 38 per cent. for agricultural implements. In four others the difference exceeds 10 per cent., and in another four it varies from about 3 to practically 5 per cent. In the two industries showing a decrease the difference, in both cases, is less than 3 per cent.

In the next presentation is found for 1897 and 1898 the excess of the greatest over the smallest number of persons employed. The comparisons in this table are by no means one-sided, and throw a great deal of light upon the ups and downs in the range of employment.

INDUSTRIES.	Number of establishments.	EXCESS OF GREATEST OVER SMALLEST NUMBER OF PERSONS EMPLOYED.		INCREASE + DECREASE — 1898.		
		1897.	1898.	Number.	Per cent.	
Agricultural implements	31	818	1,060	+	242	+ 29.58
Boots and shoes	24	271	254	—	17	— 6.27
Chairs	13	327	702	+	375	+114.67
Furniture	42	633	678	+	45	+ 7.10
Lager beer	71	368	385	+	17	+ 4.61
Leather	33	1,128	953	—	175	— 15.51
Lumber, lath and shingles	168	14,511	13,385	—	1,126	— 7.06
Machines and machinery	86	1,055	1,013	—	42	— 3.98
Paper and pulp	34	823	590	—	253	— 30.74
Sash, doors, blinds and moulding ..	73	1,227	1,342	+	115	+ 9.37
Sheet metal goods	26	406	460	+	54	+ 13.30
Wagons, carriages and sleighs.....	53	448	719	+	271	+ 60.49
Total 12 industries	654	22,015	21,541	—	474	— 2.15
Other industries	345	16,617	18,585	+	1,968	+ 11.84
All industries	1,499	38,632	40,126	+	1,494	+ 3.86

This table gives one some idea, first, of the difference between the smallest and greatest number employed in the various industries in 1897 and 1898, respectively; and secondly, it shows the result of comparing these differences, or, in what year the excess or variation was the greatest.

In 1897 the excess of the greatest over the smallest number employed was 38,632. In 1898 the excess numbered 40,126 persons. The difference is thus only 1,494, or 3.86 per cent. These figures are for all industries.

In examining the figures for the 12 leading industries which are given separately it may be seen that in the totals the number for 1898 is greater by 474 persons than that for 1897. While this number is small, it is an indication of the general

trend, and in this respect corroborates what has been shown in these presentations as a whole.

While the foregoing exhibits show quite clearly the range of employment during the two years covered, the subject is so important as to warrant further explanation. For this reason the figures for the different periods of employment have been reduced to averages and so presented in the following exhibits as to show, at each period, the average number of persons to each establishment. The next table in order shows the number of persons to each establishment at the time when the average number was employed.

INDUSTRIES.	No. of establishments	Average persons to each establishment when the <i>average</i> number was employed.		Increase + decrease — in 1898.	
		1897.	1898.	Number.	
Agricultural implements	31	60	79	+	19
Boots and shoes	24	95	102	+	7
Chairs	13	237	268	+	31
Furniture	42	58	64	+	6
Lager beer	71	43	43		
Leather	33	144	141		
Lumber, lath and shingles	168	70	75	+	5
Machines and machinery	86	52	60	+	8
Paper and pulp	34	32	104	+	12
Sash, doors and blinds	73	48	46	+	2
Sheet metal goods	26	78	82	+	4
Wagons, carriages and shingles	53	44	49	+	5
Average 12 Industries.....	654	69	74	+	5
Other Industries	845	50	57	+	7
All Industries	1,499	58	64	+	6

In the above table we find for the classifications given the average number of persons to each establishment when the average number were employed in 1897 and 1898.

This, like the other exhibits in this connection, derives its chief interest from the comparisons it affords. An increase in the average number to each establishment is shown for all industries, for other industries, in the average for the 12 industries, and in 10 of the 12 industries. Taking all industries we find that the average increase was from 58 to 64, or 6 persons. Remembering that this increase holds good for each establishment, these figures are full of meaning. "Other Industries" show a change from 50 to 57. This is an increase of 7 persons to each establishment for the 845 affected thereby.

The average for 12 industries shows an increase of 5 persons, or from 69 to 74. The change in this case is thus a trifle smaller than for other industries, or one person below the average when all industries are considered.

Considering the 12 industries, the increases are: Chairs, 31 persons; agricultural implements, 19 persons; paper and pulp, 12 persons; machinery, etc., 8 persons; boots and shoes, 7 persons; furniture, 6 persons. All of these industries show the average increase or over. Those which show less than the average increase are: Lumber, etc., and wagons, carriages, etc., with 5 persons each; and sheet metal goods, with 4 persons. Lager beer has no change. Leather has a decrease of 3, and sash, doors and blinds a decrease of 2 persons.

The next exhibit deals with the condition when the smallest number were employed.

INDUSTRIES.	No. of establishments included	Average persons to each establishment when the <i>smallest</i> number was employed.		Increase + decrease — in 1898.	
		1897.	1898.	Number.	
Agricultural implements	31	50	72	+	22
Boots and shoes	24	91	96	+	5
Chairs	13	230	233	+	3
Furniture	42	52	58	+	6
Lager beer	71	42	40	—	2
Leather	33	127	128	+	1
Lumber, lath and shingles	168	31	39	+	8
Machines and machinery	86	48	55	+	7
Paper and pulp	34	85	95	+	10
Sash, doors and blinds	73	38	39	+	1
Sheet metal goods	26	70	72	+	2
Wagons, carriages and sleighs.....	53	41	42	+	1
Average 12 Industries	654	54	59	+	5
Other Industries	845	43	48	+	5
All Industries	1,499	48	53	+	5

The preceding table relates to averages. It shows for the 12 industries, other industries, and all industries, the average persons to each establishment in 1897 and 1898 when the smallest number for the industry were employed.

The comparisons disclose many interesting facts. In the first place, it may be seen that of the 12 industries all but one show an increase in the latter year, that an increase is also shown for other industries, as well as for all industries. As to amount of the increase there is considerable variation. Agri-

cultural implements comes first. From this the order stands: Paper and pulp; sash, doors and blinds; lumber, lath and shingles; machinery, etc.; furniture; boots and shoes; chairs, etc. Lager beer is the only industry which shows a decrease.

As to the actual increase in 1898 as compared with 1897 the table gives definite figures. For all industries the average number of persons employed was increased by 5, or from 48 to 53. For other industries there was a similar increase, the average in the former being 43 as against 48 in the latter year. The 12 industries also, when taken together, show an increase of 5 in the average number employed. That the increase in these three cases should exactly correspond is one of the striking features of these figures. For each one of the itemized industries, however, the variations are considerable. Thus, agricultural implements show an increase of 22 persons, paper and pulp, 10 persons; lumber, etc., 8 persons; machinery, etc., 7 persons; furniture, 6 persons, boots and shoes, 5 persons. The remaining 5 industries show increases below the average, and their increase varies from one to three persons. Lager beer shows a decrease of 2 persons.

INDUSTRIES.	No. of establishments included.	Average persons to each establishment when <i>greatest</i> number was employed.		Increase + decrease — in 1898.	
		1897.	1898.	Number.	
Agricultural implements	31	77	106	+	29
Boots and shoes	24	102	105	+	4
Chairs	13	254	287	+	33
Furniture	42	67	75	+	8
Lager beer	71	47	46	—	1
Leather	33	161	157	—	4
Lumber, lath and shingles	168	117	118	+	1
Machines and machinery	86	61	67	+	6
Paper and pulp	34	109	113	+	4
Sash, doors and blinds	73	55	58	+	3
Sheet metal goods	26	86	90	+	4
Wagons, carriages and sleighs	53	49	56	+	7
Average 12 Industries	654	88	92	+	4
Other Industries	845	62	71	+	9
All Industries	1,499	73	80	+	7

This table shows that, when the greatest number of persons were employed, there were, for all industries, 73 persons to each establishment in 1897, and 80 persons in 1898. This indicates an increase of 7 persons to each establishment for the

latter year. For other industries, the number stood 62 and 71, an increase of 9 persons. And for the average of the 12 Industries there was a change of from 88 to 92, or an increase of 4 persons. Of the 12 industries, 10 show an increase, and 2 a decrease. Those showing the decrease are, lager beer and leather. The decreases, however, are small, there being only 1 person for the first and 4 for the second in order. The increases vary as much in this case as in the preceding exhibits, with chairs and agricultural implements in the lead. In the remaining 8 industries the increase varies from 1 to 8 persons.

In summing up, it may be noticed that between 1897 and 1898 the following changes took place in the number of persons employed.

The average number of persons employed was 87,534 in 1897, and 96,248 in 1898, an increase of 8,714 persons, or 9.95 per cent. For each establishment the increase was from 58 to 64, or 6 persons.

The smallest number of persons employed during any week in 1897 and 1898 was 71,207 for the former, and 79,663 for the latter year. There was thus an increase in 1898 of 8,456 persons, or 11.87 per cent. The average to each establishment was increased from 48 to 53, or 5 persons.

The greatest number of persons employed during any week in 1897 and 1898 was 109,809 for the former year and 119,809 for the latter. The total increase in 1898 is thus 9.07 per cent., or 9,970 persons. To each establishment the change is from 73 to 80 persons, or an increase of 7 persons.

PERSONS EMPLOYED: BY MONTHS.

We have thus seen the average number of persons employed, and the smallest and greatest number during the week the smallest and greatest number of persons were employed within the period covered. These facts throw much light upon the range of employment in our manufacturing industries. The periods, however, during which the smallest and greatest number were employed do not represent normal conditions in the business world; and the facts representing them, while important as

showing the extent of the fluctuations, do not cover, as fully as desirable, the proportion of unemployment throughout each year. For this reason the number employed by months was also obtained. By thus having the number at closer intervals, it is possible to show more definitely the range of unemployment. The following table shows the aggregate number of persons employed each month in 1897 and 1898:

MONTHS.	Aggregates persons employed by months.		Increase + decrease -	
	1897.	1898.	Number.	Per cent.
January	75,546	84,256	+ 8,710	+ 11.52
February	77,760	86,323	+ 8,563	+ 11.01
March	80,498	90,019	+ 9,521	+ 11.82
April	87,483	98,004	+ 10,521	+ 12.02
May	92,322	101,403	+ 9,081	+ 9.84
June	92,732	101,880	+ 9,148	+ 9.86
July	92,330	102,290	+ 9,960	+ 10.78
August	92,567	102,318	+ 9,751	+ 10.53
September	92,678	101,264	+ 8,586	+ 9.26
October	92,973	98,995	+ 6,022	+ 6.47
November	88,216	96,619	+ 8,403	+ 9.52
December	83,259	91,533	+ 8,334	+ 10.00
Average	87,364	96,247	+ 8,883	+ 10.20

As said above, this table gives the aggregate number of persons employed each month in 1897 and 1898. It also shows the increase in 1898 both in number and percentage.

For each year the smallest number were employed in January. That this should be so is natural, as business is at its lowest point at this time of the year. From this month on there is in both cases a gradual increase. In June and July the top level is closely approached, and for the three succeeding months there is little change. In 1897 the highest point was reached in October, and in 1898 in August. The difference between the highest and lowest point is 17,327 persons in 1897, and 18,062 in 1898, a respective increase of about 22 per cent. Why the highest should have been employed in October for one year and in August for the other the returns do not disclose. The variations, however, during the summer and fall months are so small as to be of little effect.

As to the increase in the number employed in 1898 as compared with 1897 there is as between the months a remarkably close relation. For January the increase was 11.52 per cent.

During the following three months the change does not vary more than one-half of one per cent. In May, however, the increase fell to 9.84 per cent. from this. Then again the change did not reach one per cent. until in October, when it fell to 6.47 per cent. The next month, however, or in November, the percentage is again up to 9.52, or about at the point where it stood in September. For December the increase was 10 per cent.

As said the preceding exhibits relate to the aggregate number of both males and females employed. The next exhibit in order shows by months the aggregate male persons employed in 1897-98 together with the increase for the latter year.

MONTHS.	Aggregates males employed by months.		Increase + decrease -	
	1897.	1898.	Number.	Per cent.
January	66,992	74,293	+ 7,301	+ 10.91
February	68,966	75,979	+ 7,013	+ 10.16
March	71,252	79,212	+ 7,960	+ 11.17
April	77,959	86,906	+ 8,946	+ 11.47
May	82,675	90,232	+ 7,657	+ 9.27
June	83,232	90,465	+ 7,223	+ 8.67
July	82,315	90,115	+ 7,800	+ 9.47
August	82,131	90,206	+ 8,075	+ 9.83
September	82,383	90,092	+ 7,709	+ 9.36
October	83,147	88,016	+ 4,869	+ 5.86
November	78,667	85,810	+ 7,153	+ 9.09
December	73,806	80,794	+ 6,979	+ 9.44
Average	77,784	85,175	+ 7,391	+ 9.55

The above table, dealing with the aggregate male persons only, presents, relatively speaking, few features that are not also true of the one preceding it. The total number is, of course, smaller, and the highest number for both years is found for the month of June. The similarity between the two exhibits is striking. Thus we see that for the four first months the percentage of increase is almost identical, varying only from 10.16 to 11.47. For the five months, May and September inclusive, the percentage varies from 8.67 to 9.83. October shows the smallest increase, while for the two last months it is back to about the average. The next exhibit relates to the aggregate number of female persons employed.

MONTHS	Aggregates females employed by months.		Increase + decrease -	
	1897.	1898.	Number.	Per cent.
January	8,554	9,963	+ 1,409	+ 16.47
February	8,794	10,344	+ 1,550	+ 17.62
March	9,246	10,807	+ 1,561	+ 16.89
April	9,524	11,053	+ 1,575	+ 16.53
May	9,749	11,171	+ 1,422	+ 14.60
June	9,500	11,425	+ 1,925	+ 20.26
July	10,015	12,175	+ 2,160	+ 21.56
August	10,436	12,112	+ 1,676	+ 16.06
September	10,249	11,172	+ 923	+ 9.00
October	9,826	10,979	+ 1,153	+ 11.73
November	9,561	10,809	+ 1,248	+ 13.06
December	9,454	10,803	+ 1,355	+ 14.33
Average	9,576	11,072	+ 1,496	+ 15.60

The above table shows the aggregate female persons employed each month in 1897 and 1898. As for the aggregates and for male persons the smallest number is found for January. From that point there is a steady increase until August in 1897 and July in 1898, when the highest point for the respective year is reached. The decrease during the succeeding four and five months is gradual and comparatively small, the figures for December, in both cases, being only a trifle below those for the highest month.

The percentage of increase in 1898 as compared with 1897 is higher for this table than for the two preceding ones. For January the increase is 16.47 per cent., and the four months which follow gravitate closely about this point. For June and July the increase is somewhat higher, but for August and September there is a sudden falling off. The lowest point is that for the latter month; and the tendency up to the end of the year is upward, December being only two per cent. below January.

MONTHS.	Percentage employed.		Percentage unemployed.	
	1897.	1898.	1897.	1898.
January	81.26	82.34	18.74	17.66
February	83.63	84.38	16.37	15.64
March	86.76	87.87	13.24	12.03
April	94.09	95.78	5.91	4.22
May	99.29	99.10	.71	.90
June	99.74	99.57	.26	.43
July	99.39	99.97	.61	.08
August	99.56	100.00	.44	.....
September	99.68	88.96	.32	1.04
October	100.00	96.75	.....	3.25
November	94.88	94.43	5.12	5.57
December	89.55	89.51	10.45	10.49
Average	93.90	94.07	6.10	5.93

The preceding exhibit relates entirely to the proportion employed and unemployed. Thus we see that it shows, for each month in 1897 and 1898, the percentage of persons employed or unemployed as based upon the greatest number employed. For 1897 the greatest number is found for October. This month is therefore used as a basis and the proportion is expressed by 100 per cent. Going back to January, we find the percentage at 81.26. This means that 18.74 per cent. of the whole number employed in October were unemployed in January. In February the percentage employed was 83.63, and those without employment 16.37. In March the percentage of the employed had risen to 86.76, and those without work had decreased correspondingly. In April, the employed increased to 94.09, and in May to 99.29 per cent.; while the unemployed had decreased to a fraction only of one per cent. This relation is positively maintained until in October when the greatest, or full number for the year, is reached, which is indicated by 100 per cent. For November and December there was a decrease in the employed, and an increase in the unemployed, the relation standing at 94.88 and 5.12 for the former month, and 89.55 and 10.45 for the latter.

For 1898 the greatest number of persons employed is found for the month of August, and this also is indicated by 100 per cent. The lowest number is for January, the relation for this month being only 82.34 per cent. of that for August. This must mean that in the month of January 17.66 per cent. of the

greatest number employed during the year were out of employment. With the exception that for 1898 the highest number is for August as against October for the preceding year, the course of employment for the two years is very much the same, the range for 1898 being a trifle more narrow than for 1897.

The following exhibit gives the average persons to each establishment in 1897 and 1898; also the increase for the latter year:

MONTHS.	Average persons to each establishment.		Increase in 1898.
	1897.	1898.	
January	50	56	6
February	51	58	7
March	54	60	6
April	58	65	7
May	62	67	5
June	62	68	6
July	62	69	7
August	62	70	8
September	62	68	6
October	63	66	3
November	59	65	6
December	56	61	5
Average	58	64	6

We find here the average number of persons, each month in 1897 and 1898, to each establishment included. We also find the excess in 1898 as compared with the preceding year. For both years the smallest average number is that for January, or 50 for 1897 and 56 for 1898, an increase in the latter year of 6 persons. For 1897 the highest number is that for October. For 1898 the highest number is in August. As was said above these are the months in each year during which the greatest number of persons were employed. The range between the smallest and greatest number in 1897 is from 50 to 63, or 13 persons. In 1898 the range is from 56 to 70, or 14 persons. This relation is remarkably close and unquestionably indicates that the trend of business was the same for both years. The greatest increase in 1898 is for August, when it amounts to 8 persons; and the smallest increase is for October, with 3 persons only. In computing these figures fractions were omitted.

MONTHS.	Percentages of males and females.					
	1897.			1898.		
January	88.55	11.45	100.00	88.18	11.82	100.00
February	88.69	11.31	100.00	87.92	12.08	100.00
March	88.51	11.49	100.00	87.99	12.01	100.00
April	89.11	10.89	100.00	88.68	11.32	100.00
May	89.44	10.56	100.00	88.98	11.02	100.00
June	89.53	10.47	100.00	88.29	11.71	100.00
July	89.80	10.20	100.00	88.09	11.91	100.00
August	89.16	10.85	100.00	88.16	11.84	100.00
September	88.72	11.28	100.00	88.96	11.04	100.00
October	89.43	10.57	100.00	88.91	11.09	100.00
November	89.18	10.82	100.00	88.81	11.19	100.00
December	88.68	11.32	100.00	88.20	11.80	100.00
Averages	89.10	10.90	100.00	88.50	11.50	100.00

The next preceding exhibit relates to the proportion of males and females among the persons employed. Thus it shows for each month in 1897 and 1898 the relative percentage of males and females of the aggregate persons employed by months.

As to the relative percentage there is but little variation. In 1897 the percentage of males, from month to month, moves between 88.51 and 89.80 per cent., a difference of 1.29 per cent. only. For females the variation is from 10.20 to 11.49 per cent., corresponding in every respect to the changes for males. In 1898 the males vary from 87.92 to 88.98 per cent., a difference of only 1.06 per cent. For females the percentage varies from 11.02 to 12.08. As between the two years there is an increase in 1898 of a trifle less than one per cent. in the proportion of females employed.

From the foregoing presentation relating to the persons employed by months, the following facts may be repeated:

The number of persons employed each month in 1897 ranged from 75,546 to 92,973, giving an average to each month of 87,364 persons.

The number of persons employed each month in 1898 ranged from 84,256 to 102,318, giving an average to each month of 96,247 persons.

Comparing the averages for 1897 and 1898 which were 87,364 and 96,247, respectively, we find an increase for 1898 of 8,883 persons, or 10.2 per cent.

Of the monthly average number of persons in 1897, 77,784 or

89.10 per cent. were males and 9,574 or 10.90 per cent. were females.

Of the monthly average in 1898, 85,175 persons, or 88.50 per cent. were males and 11,072 or 11.50 per cent. females.

Comparing the males for the two years we find an increase in 1898 as compared with 1897 of 7,391 persons, or 9.55 per cent.

Comparing the females we find an increase for 1898 of 1,496 persons or 15.60 per cent.

Comparing the relative position of the males and females we find it, as said, 89.10 and 10.90 per cent., respectively for 1897, and 88.50 and 11.50 per cent., respectively, in 1898.

While the increase of females in 1898 was 1,496 or 15.6 per cent. when based on number of females employed in 1897, it amounted to only about six-tenths of one per cent. when based on the aggregate number employed for that year. The relation of males to females was nearly 9 males to one female.

The average monthly number of persons to each establishment was 58 in 1897, and 64 in 1898, an increase for the latter year of 6 persons or a fraction over 10 per cent.

Efforts were made to ascertain from the data the proportion of persons employed or unemployed each month during the two years. To this end the number for the month during which the greatest number were employed was regarded as full employment and made to serve as a basis with which the number for each one of the other months were placed in comparison. Thus the greatest number is represented by 100 per cent. and the number for the other months in percentages of the greatest number.

On this basis the range of employment in 1897 was between 81.74 and 100 per cent. and in 1898 between 82.34 and 100 per cent. From this it follows that for the months in which the smallest number were employed 18.74 per cent. were unemployed in 1897 and 17.66 per cent. in 1898. For most of the months, however, the proportion of unemployed was much smaller, as is seen from the fact that the average monthly unemployment was only 6.10 per cent. for the former year and 5.93 for the latter. On the average 93.90 and 94.07 per cent. of the total could have found employment.

WAGES PAID.

The data of wages collected in 1897 and 1898 consisted, for each year and for each establishment included, of the total amount paid as wages, and of the classified weekly earnings of mechanics, operatives and workers, or in other words of all employes except office help and those engaged in the management of the business or in the selling of the goods.

As in the other cases this data was classified as to industries. The main presentations are made in tables XII, XIII and XIV. In table XII is found, by industries, the total amount of wages paid each year and in the increase or decrease in 1898. Table XIII shows the average earnings to each worker and the increase or decrease in 1898. The amount to each worker was obtained by dividing the total amount paid as wages by the average number of persons employed and is thus a simple arithmetical average. Table XIV shows the classified weekly earnings. This table is quite extensive, covering several pages in the report.

The facts thus presented are analysed here in the following order: Total wages paid, average yearly earnings to each person, and classified weekly earnings. Exhibits showing the percentage of males and females in each wage class are also given.

The first exhibit in this series shows for each of the 12 leading industries, for other industries and for all industries, the aggregate amount of wages paid in 1897 and 1898, by the establishments included and the increase and decrease in the amount in the latter year as compared with 1897.

INDUSTRIES.	N. of establishments considered.	Total amount paid in wages during the years.		Increase + or decrease — in 1898.	
		1897.	1898.	Amounts	Per cent.
Agricultural implements	31	\$338,930	\$1,282,127 +	\$343,197 +	36.55
Boots and shoes	24	686,972	736,407 +	49,435 +	7.19
Chairs	13	892,360	1,020,393 +	128,033 +	14.34
Furniture	42	727,752	823,267 +	95,515 +	13.12
Lager beer	71	1,636,468	1,637,511 —	48,967 —	2.90
Leather	33	2,028,342	2,054,927 +	26,585 +	1.31
Lumber, lath and shingles	168	4,566,264	5,202,235 +	635,971 +	13.92
Machinery and machines	86	2,343,671	2,773,393 +	429,722 +	18.33
Paper and pulp	34	1,240,476	1,346,931 +	145,455 +	11.72
Rash, doors, blinds and moulding.	73	1,159,449	1,202,110 +	42,661 +	3.67
Sheet metal goods	26	621,091	626,534 +	5,493 +	0.88
Wagons, carriages and sleighs	53	961,241	1,110,085 +	158,794 +	16.69
Other industries	845	18,740,028	20,465,763 +	1,725,755 +	9.20
All Industries	1,499	\$36,563,044	\$40,320,703 +	\$3,737,659 +	10.21

This table is one of the comparisons. Taking the totals for all industries it is seen that the 1,499 establishments paid as wages \$36,583,044 in 1897, and \$40,320,703 in 1898. In 1898 as compared with the preceding year there is thus an increase of \$3,737,659 or 10.21 per cent.

The 845 establishments included under other industries show an outlay for wages of \$18,740,028 in 1897 and \$20,465,783 in 1898. The increase in favor of 1898 is thus \$1,725,755 or 9.20 per cent.

The 12 leading industries which include 654 establishments paid in wages \$17,740,028 in 1897 and \$19,854,920 in 1898. In the latter year the increase thus amounts to \$2,011,904 or 11.28 per cent.

The 12 leading industries thus paid 48.8 per cent. of the total wages in 1897 and 49.22 per cent. in 1898, while they show 51.15 per cent. of the increase.

Other industries show 51.20 and 50.78 per cent. of the total wages paid in 1897 and 1898, respectively, and 48.85 per cent. of the increase. The increase was thus relatively larger for the 12 leading than for other industries.

Looking at each industry or group of industries separately, it is found that the figures vary considerably. Agricultural implements show an increase for 1898 amounting to 36.55 per cent. This is the greatest increase in the exhibit. It denotes plainly that the condition in that industry during the latter year was one of great activity. Boots and shoes has an increase of 7.19 per cent., chairs and furniture of 14.34 and 13.12 per cent. respectively. The furniture line thus displays considerable activity. In lager beer there was a decrease of 2.90 per cent. and for leather an increase of 1.31 per cent. The condition in these cases as indicated here is also fully borne out by the figures showing the output. Lumber, etc., shows an increase of 13.92, machinery of 18.33 and paper and pulp of 11.72 per cent. These three industries are among the greatest in the state and all show a large volume of business. For sash, doors, etc., and sheet metal goods, the figures are more conservative, particularly in the latter case. It is possible that the constantly increasing prices of material during the year partly explains this. The

wagon and sleigh industry was brisk, showing an increase of 16.69 per cent. For other industries the increase was 9.20 per cent. and for all industries 10.21 per cent. These figures, as a whole, confirm what has been shown in other illustrations relating to the business situation for 1898.

Of the 58 industries included all except 9 show an increase in 1898 as compared with 1897. This may be seen in table XII.

Those showing a decrease are: Brooms, brushes and baskets, lager beer, burial cases, caskets, etc., paints, oils, etc., chemical preparations, staves and heading, cigars, snuff and tobacco, stone, granite, etc., cotton and linen goods.

The following exhibit shows the average wages to each person or worker in 1897 and 1898 and the increase or decrease for the latter year.

INDUSTRIES.	No. of establishments considered.	Average yearly earnings.		Increase + or decrease — in 1898.	
		1897.	1898.	Amounts.	Per cent.
Agricultural implements	31	\$503.18	\$522.48	+ \$19.30	+ 3.83
Boots and shoes	24	298.81	301.06	+ 2.24	+ 0.75
Chairs	13	288.70	292.79	+ 4.09	+ 1.41
Furniture	42	298.14	307.07	+ 8.93	+ 2.99
Lager beer	71	542.62	536.88	— 5.74	— 1.06
Leather	33	426.66	442.58	+ 15.92	+ 3.73
Lumber, lath and shingles	168	386.09	411.21	+ 25.12	+ 6.50
Machines and machinery	86	522.44	537.53	+ 15.14	+ 2.89
Paper and pulp	34	393.71	392.94	— 0.77	— 0.19
Sash, doors, blinds and moulding	73	330.61	355.54	+ 24.93	+ 7.54
Sheet metal goods	26	304.15	293.48	— 10.67	— 3.50
Wagons, carriages and sleighs ..	53	401.37	428.75	+ 27.38	+ 6.82
Other industries	845	439.99	426.96	— 14.04	— 3.19
All industries	1,499	\$416.79	\$418.92	+ 2.13	.51

The preceding table shows for all industries or the 1,499 establishments, that the average amount to each person was \$416.79 in 1897 and \$418.92 in 1898. This is an increase in the average wages for 1898 of \$2.13 or a trifle over one-half of one per cent.

For other industries the average amount was \$439.99 for 1897 and \$425.95 for 1898. A decrease of \$14.04 or 3.19 per cent.

For the 12 leading industries, or 654 establishments, the average stood at \$399.24 and \$411.92 in 1897 and 1898, respectively. In 1898, as compared with the preceding year, there was thus an increase of \$11.28, or 2.83 per cent.

Of the 12 leading industries, 9 show an increase in average wages and 3 show a decrease. In the increase there is a great variation from industry to industry. Thus we find agricultural implements showing an upward course in wages, the increase in the average wages for 1898 being \$19.30. Boots and shoes show an increase of \$2.24. For chairs and furniture it was \$4.09, and \$8.93. Lager beer presents a decrease of \$5.74. Leather shows an increase of \$15.92, lumber of \$25.12, and machinery, etc., of \$15.14. Paper and pulp shows a decrease in average wages of 77 cents; sash, doors, etc., an increase of \$24.93. Then comes sheet metal goods with a downward tendency amounting to \$10.67. For wagons, carriages, etc., the increase amounts to \$27.38.

As table XIII shows, there is an increase in the average earnings to each person in 36 industries and a decrease in 22 industries. The following show a decrease: Artisans' tools, etc., bicycles, etc., boxes, wooden and paper, burial cases, caskets, etc., cement, lime, plaster, etc., chemical preparations, cigars, snuff, etc., clothing, confectioneries, etc., cotton and linen goods, electrical and gas apparatus, etc., food preparations, iron goods (malleable), knit goods, lager beer, office furniture, paints, oils, etc., paper and pulp, railway equipments, sheet metal goods, staves and heading, toys and games.

No great claim can be made for these averages; as a whole they show the amount to each when the total amount paid as wages is divided by the average number employed. Beyond this, they cannot be used with any degree of safety.

The five presentations next in order are devoted to classified weekly earnings. The next exhibit shows the number of males and females distinguished as to age who received classified wages in 1897 and 1898.

CLASSIFIED WEEKLY EARNINGS.	NUMBER OF PERSONS EMPLOYED.					NUMBER OF PERSONS EMPLOYED.				
	1897.					1898.				
	Males 18 years or over.	Females 18 years or over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years or over.	Females 18 years or over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per week and over.	861	.....	.....	.....	861	926	.....	.....	.....	926
20.00 but under \$25.00	1,674	.....	.....	.....	1,674	1,789	.....	.....	.....	1,789
15.00 but under 20.00	1,632	.....	.....	.....	1,632	1,769	.....	.....	.....	1,769
10.00 but under 15.00	3,980	.....	.....	.....	3,980	4,783	.....	.....	.....	4,783
13.00 but under 15.00	4,194	.....	.....	.....	4,194	4,925	.....	.....	.....	4,925
12.00 but under 13.00	7,156	.....	.....	.....	7,156	8,215	.....	.....	.....	8,215
11.00 but under 12.00	3,193	78	.....	.....	3,271	3,284	84	.....	.....	3,368
10.00 but under 11.00	6,117	74	.....	.....	6,191	6,871	93	.....	.....	6,964
9.00 but under 10.00	14,357	118	.....	.....	14,475	17,673	138	.....	.....	17,811
8.00 but under 9.00	10,321	202	.....	.....	10,523	11,368	281	.....	.....	11,649
7.00 but under 8.00	14,633	307	133	61	15,134	15,994	298	112	25	16,419
6.00 but under 7.00	7,878	788	293	30	8,989	8,734	897	355	33	10,019
5.50 but under 6.00	1,515	386	215	11	2,127	1,408	763	240	7	2,418
5.00 but under 5.50	1,244	821	301	24	2,393	1,505	1,179	325	84	3,099
4.50 but under 5.00	1,135	1,471	1,474	164	4,244	1,277	1,768	1,247	110	4,400
4.00 but under 4.50	477	1,145	1,231	278	3,131	593	1,312	1,173	328	3,406
3.50 but under 4.00	223	401	1,394	433	2,451	243	1,380	1,577	437	3,337
3.00 but under 3.50	135	823	2,051	772	3,781	76	692	2,459	897	4,124
2.50 but under 3.00	262	1,105	628	1,993	.....	281	1,123	1,005	2,409	.....
2.00 but under 2.50	201	676	403	1,280	.....	75	594	745	1,414	.....
1.50 but under 2.00	54	97	206	357	.....	17	211	346	574	.....
Under \$1.50	9	3	74	86	.....	.....	11	56	67	.....
Aggregates	80,605	7,090	8,976	3,082	99,753	91,456	9,250	9,430	4,073	114,209
Percentages	80.80	7.11	9.00	3.09	100.00	80.07	8.10	8.26	3.57	100.00

In the preceding exhibit we find, for 1897 and 1898, the respective number of males and females over and under 18 years of age who received classified weekly earnings. The classification as to earnings, sex, and age are thus quite comprehensive and affords many opportunities for comparison. Before taking up earnings, attention will be called to a few facts concerning the relative number of persons in each sex and age class.

Thus it is seen that the aggregate persons receiving classified earnings in 1897 was 99,753. Of these 80,605 or 80.80 per cent. were males 18 years or over, and 7,090, or 7.11 per cent., females 18 years or over. Those under 18 years were: Males, 8,976 or 9 per cent.; females 3,082 or 3.09 per cent.

For 1898 the aggregate number was 114,209, of these 91,456 or 80.07 per cent. and 9,250 or 8.10 per cent., respectively, were males and females 18 years of age or over, while 9,430 or 8.26 per cent. and 4,073 or 3.57 per cent., respectively, were males and females under 18 years of age.

Comparing the relative number it is seen that in 1898 as com-

pared with 1897 a few changes occurred. Thus in 1898 the males over 18 years had decreased from 80.80 to 80.07 per cent. and the females over this age increased from 7.11 to 8.10 per cent. For the males the decrease thus amounted to three-fourths of one per cent., while for females there was an increase of one per cent. Males under 18 decreased from 9.00 to 8.26 per cent.; and females increased from 3.09 to 3.57 per cent., or about one-half of one per cent.

Classified as to age, regardless of sex, the proportion over 18 years was 87.91 in 1897 as against 88.17 per cent. in 1898, an increase in the latter year of one-fourth of one per cent.

Classified as to sex, regardless of age, we find the percentage of males was 89.80 in 1897 and 88.33 in 1898, a decrease of males in 1898 of nearly one-half of one per cent.

From the figures as a whole it thus appears that in 1898 the number under 18 years decreased by .26 per cent. and that the number of females increased 1.47 per cent.

The real purpose of this exhibit, however, was to show classified weekly earnings, as this can be done to better advantage when the relation of the figures are expressed in percentages, the following exhibit in which this is done is included.

CLASSIFICATION OF EARNINGS.	PERCENTAGES.						PERCENTAGES.					
	1897.						1898.					
	Males 18 years or over.	Females 18 years or over.	Males un- der 18 years.	Females un- der 18 years.	Aggregate persons employed.		Males 18 years or over.	Females 18 years or over.	Males un- der 18 years.	Females un- der 18 years.	Aggregate persons employed.	
\$25.00 per week and over..	1.07	.....	.....	.....	0.86		1.02	.....	.....	.....	.....	81
20.00 but under \$25.00..	2.05	.....	.....	.....	1.6		1.93	.....	.....	.....	.....	1.56
15.00 but under 20.00..	2.02	.....	.....	.....	1.64		1.93	.....	.....	.....	.....	1.76
10.00 but under 15.00..	4.78	.....	.....	.....	3.87		5.23	.....	.....	.....	.....	4.18
5.00 but under 10.00..	5.20	.....	.....	.....	4.21		5.38	.....	.....	.....	.....	4.31
13.00 but under 15.00..	8.88	.....	.....	.....	7.17		8.88	.....	.....	.....	.....	7.13
12.00 but under 13.00..	3.97	1.11	.....	.....	3.27		3.59	0.95	.....	.....	.....	2.95
11.00 but under 12.00..	7.58	1.05	.....	.....	6.30		7.52	1.01	.....	.....	.....	6.08
10.00 but under 11.00..	17.81	1.67	.....	.....	14.51		19.32	1.49	.....	.....	.....	15.59
9.00 but under 10.00..	12.90	2.85	.....	.....	10.54		12.46	3.03	.....	.....	.....	10.21
8.00 but under 9.00..	18.18	4.33	1.37	1.98	15.15		17.45	3.12	1.1	0.62	14.97	8.75
7.00 but under 8.00..	8.77	10.41	3.25	0.88	8.98		9.56	9.69	3.76	0.81	8.75	8.75
6.00 but under 7.00..	1.87	5.45	2.38	0.95	2.17		1.54	8.25	2.55	0.17	2.12	2.12
5.00 but under 6.00..	1.54	11.58	3.37	0.77	2.40		1.64	12.75	3.49	2.08	2.64	2.64
4.50 but under 5.00..	1.41	20.74	16.41	5.32	4.25		1.39	19.02	13.23	2.70	3.84	3.84
4.00 but under 4.50..	0.59	16.15	13.93	9.73	3.14		0.66	14.18	12.43	8.05	2.96	2.96
3.50 but under 4.00..	0.28	5.65	15.52	14.04	2.46		0.27	14.93	16.72	10.73	3.15	3.15
3.00 but under 3.50..	0.17	11.61	22.84	25.01	3.79		0.08	7.48	26.07	22.01	3.60	3.60
2.50 but under 3.00..	.....	3.69	12.31	20.32	2.03		.....	3.03	11.91	24.67	2.10	2.10
2.00 but under 2.50..	.....	2.82	7.52	13.08	1.28		.....	0.82	6.31	18.29	1.23	1.23
1.50 but under 2.00..	.....	0.76	1.07	6.6	0.36		.....	0.18	2.23	8.49	0.50	0.50
Under \$1.50..	.....	0.13	0.03	2.41	0.08		.....	0.11	1.37	1.37	0.03	0.03
Totals.....	100.00	100.00	100.00	100.00	100.00		100.00	100.00	100.00	100.00	100.00	100.00

Of the total in each case, for males and females over and under 18 years of age, as well as for all the preceding exhibit, show the percentage of persons to each wage class in 1897 and 1898. In order to show the relative position of the earnings during the period, it is necessary to compare the figures for the two years.

In this consideration the aggregates will come first. Thus we find that the aggregate number of persons employed was 99,753 in 1897, and 114,209 in 1898. Of these numbers 861, or .86 per cent., in the former, and 976, or .81 per cent. in the latter year received \$25.00 per week or over. The increase for this class in 1898 was thus a trifle smaller than the increase for the aggregates. This is also true of the next class in order. For the class \$18.00 but under \$20.00, the percentage stands 1.64 and 1.76, respectively for 1897 and 1898, showing a slight increase for the latter year. The next three classes in order also show increases in the percentage in 1898. For \$11.00 but under \$12.00, however, this course is reversed, the percentage for 1898 being 2.75 as against 3.27 for 1897. This tendency is also apparent in the class which follows, but is again reversed in the class \$9.00 but under \$10.00. Here, there was a sudden increase in the number employed of about 9 per cent., the actual figures for the two years being 14.51 and 15.59 per cent., respectively, an increase of 1.08 per cent. for 1898. From this point downwards in the table there is an intermittent decrease in the percentages for the various classes and a small decrease for 1898, until the class \$3.50 but under \$4.00 is reached. This class shows 2.46 per cent. for 1897 and 3.18 per cent. for 1898, an increase of .72 per cent. The class \$3.00 but under \$3.50 show 3.79 and 3.60 per cent. for the two years, or a slight decrease. From this there is a gradual dwindling in the proportion until for the last it is only a small fraction of one per cent.

Considering again the aggregates for the two years it may be seen that a few of the wage-classes show a much greater proportion of persons than others. The classes which are particularly prominent in this respect are: \$12.00 but under \$13.00, \$9.00 but under \$10.00, \$7.00 but under \$8.00 and perhaps \$3.00 but under \$3.50.

The class \$12.00 but under \$13.00 shows for each of the years a percentage of persons about three per cent. higher than for the preceding class and about four per cent. higher than for the one succeeding it. This class represents a wage of about two dollars per day. The class \$9.00 but under \$10.00 also gives a much greater percentage than those preceding it and the one which immediately follows. It is made up mostly of those who receive \$1.50 per day and these are in many industries the most numerous. The next class which shows this tendency is \$7.00 but under \$8.00, composed of the \$1.25 per day hands. This class, together with the two by which it is preceded, embraces about 40 per cent. of the aggregate persons employed. Of the male workers over 18 years these classes represent about one-half. The greater part of the unskilled adult male factory workers are thus paid from \$1.25 to \$1.50, inclusive, per day.

In 1897, 43.40 per cent. of the aggregate workers received \$9.00 per week or over. In 1898 44.42 per cent. received this amount. This surely indicates a small upward tendency for the latter year. The increase, however, seems to have affected mostly those who received \$7.00 but under \$8.00, as this class, for 1898 shows a decrease nearly as great as the increase for the class \$9.00 but under \$10.00.

The next exhibit represents an attempt to show what wage-classes were mostly affected by increase of persons employed in 1898.

CLASSIFICATION OF WAGES.	Aggregate persons both sexes.		Increase + decrease -.		Per cent. of classified wages.
	1897.	1898.	Number.	Pct cent.	
\$25.00 per week and over	861	926	+ 65	+ 7.54	0.46
20.00 but under \$25.00	1,674	1,789	+ 115	+ 6.86	0.85
18.00 but under 20.00	1,632	1,769	+ 137	+ 8.39	0.96
15.00 but under 18.00	3,860	4,783	+ 923	+ 23.91	6.38
13.00 but under 15.00	4,194	4,926	+ 731	+ 17.42	5.25
12.00 but under 13.00	7,151	8,215	+ 1,064	+ 14.87	7.14
11.00 but under 12.00	3,271	3,872	+ 601	+ 18.08	0.60
10.00 but under 11.00	6,191	6,964	+ 773	+ 12.48	5.34
9.00 but under 10.00	14,475	17,811	+ 3,336	+ 23.04	23.06
8.00 but under 9.00	10,523	11,669	+ 1,146	+ 10.89	7.93
7.00 but under 8.00	15,134	16,419	+ 1,285	+ 8.49	8.89
6.00 but under 7.00	8,939	10,019	+ 1,080	+ 12.08	7.47
5.50 but under 6.00	2,179	2,418	+ 239	+ 10.96	1.65
5.00 but under 5.50	2,393	3,099	+ 706	+ 29.54	4.38
4.50 but under 5.00	4,244	4,400	+ 156	+ 3.67	1.18
4.00 but under 4.50	3,131	3,406	+ 275	+ 8.78	1.35
3.50 but under 4.00	2,451	3,637	+ 1,186	+ 48.38	8.25
3.00 but under 3.50	3,781	4,124	+ 343	+ 9.07	2.35
2.50 but under 3.00	1,993	2,406	+ 416	+ 20.82	2.83
2.00 but under 2.50	1,280	1,414	+ 134	+ 10.46	0.82
1.50 but under 2.00	357	574	+ 217	+ 60.78	1.57
Under \$1.50	86	67	- 19	- 22.09	0.13
Totals	99,753	114,209	+14,456	+ 14.49	100.00

The table shows for each wage-class the aggregate persons employed in 1897 and 1898, the increase or decrease in number and percentage for the latter year; also the relative increase for each class.

The table shows an aggregate increase in 1898 as compared with 1897, of 14,456 persons or 14.49 per cent. Only one class, the last one, shows a decrease. The greatest increase with 3,336 persons is found for \$9.00 but under \$10.00.

Considering the increases for each class in their relation to the total increase, a few interesting results are obtained. Thus we see that of 14,456 persons which constitutes the increase 3,336, or 23.08 per cent., are found for the class \$9.00 but under \$10.00. Nearly one-fourth of the actual increase is thus found for one class alone. As this is the wage-class which represents the best kind of common labor and a large proportion of those who have some skill the nature of the increase or the demand to which it was a response, is readily seen.

CLASSIFIED WEEKLY EARNINGS.	PERSONS EMPLOYED.			PERSONS EMPLOYED.		
	1897.			1898.		
	Males.	Females.	Aggre- gates.	Males.	Females.	Aggre- gates.
\$25.00 per week and over...	861	.....	861	926	.....	926
20.00 but under \$25.00.....	1,674	.....	1,674	1,789	.....	1,789
18.00 but under 20.00.....	1,632	.....	1,632	1,769	.....	1,769
15.00 but under 18.00.....	3,860	.....	3,860	4,783	.....	4,783
13.00 but under 15.00.....	4,194	.....	4,194	4,925	.....	4,925
12.00 but under 13.00.....	7,156	.....	7,156	8,215	.....	8,215
11.00 but under 12.00.....	3,193	78	3,271	3,284	88	3,372
10.00 but under 11.00.....	6,117	74	6,191	6,871	93	6,964
9.00 but under 10.00.....	14,357	118	14,475	17,673	138	17,811
8.00 but under 9.00.....	10,321	202	10,523	11,398	281	11,669
7.00 but under 8.00.....	14,766	368	15,134	16,106	313	16,419
6.00 but under 7.00.....	8,171	768	8,939	9,089	930	10,019
5.50 but under 6.00.....	1,730	397	2,127	1,648	770	2,418
5.00 but under 5.50.....	1,548	845	2,393	1,836	1,263	3,099
4.50 but under 5.00.....	2,609	1,635	4,244	2,524	1,876	4,400
4.00 but under 4.50.....	1,708	1,423	3,131	1,766	1,640	3,406
3.50 but under 4.00.....	1,617	834	2,451	1,820	1,817	3,637
3.00 but under 3.50.....	2,186	1,596	3,781	2,535	1,589	4,124
2.50 but under 3.00.....	1,106	888	1,993	1,123	1,286	2,409
2.00 but under 2.50.....	676	604	1,280	594	820	1,414
1.50 but under 2.00.....	97	260	357	211	363	574
Under \$1.50.....	3	83	86	11	56	67
Aggregates.....	89,581	10,172	99,753	100,886	13,323	114,209
Percentages.....	89.80	10.20	100.00	88.33	11.67	100.00

The preceding exhibit shows for each wage-class the respective number of males and females in 1897 and 1898.

As has been explained already it is seen from the aggregate that of the 99,753 persons for 1897, 89,581, or 89.80 per cent., were males and 10,172 persons or 10.20 per cent. were females;

and that, in 1898, of the 114,209 persons employed 100,886 or 88.33 per cent. were males and 13,323 or 11.67 per cent. females.

The increase for 1898 was thus 14,456 persons. Of these 11,305 or 71.30 per cent. were males and 3,151 or 28.70 per cent. females. This indicates that during the period the female employees increased at a greater ratio than males.

In 1897 the greatest number of males for any one class was for \$7.00 but under \$8.00. This class embraced 14,766 persons. The same year the greatest number of females is for \$4.50 but under \$5.00, the actual number being 1,635.

For the aggregate persons in 1897 the greatest number for any one class is 15,134 and the class for which this figure stands is \$7.00 but under \$8.00

For 1898 the greatest number of males, 17,673, is found in class \$9.00 but under \$10.00 and the greatest number of females in class \$4.50 but under \$5.00. For the aggregate for both sexes the greatest number is found in class \$9.00 but under \$10.00, or the same as for males. The aggregate in this case is 17,811.

This table also is represented by percentages. The results when thus converted are seen in the following table:

CLASSIFIED WEEKLY EARNINGS.	PERCENTAGE OF PERSONS EMPLOYED.			PERCENTAGE OF PERSONS EMPLOYED.		
	1897.			1898.		
	Males.	Females.	Aggre- gates.	Males.	Females.	Aggre- gat a.
\$25.00 per week and over..	0.37	.....	0.86	0.91	.....	0.81
20.00 but under 25.00.....	1.86	.....	1.67	1.78	.....	1.56
18.00 but under 20.00.....	1.83	.....	1.64	1.76	.....	1.76
15.00 but under 18.00.....	4.40	.....	3.87	4.74	.....	4.18
13.00 but under 15.00.....	4.78	.....	4.21	4.89	.....	4.31
12.00 but under 13.00.....	7.98	.....	7.17	8.14	.....	7.18
11.00 but under 12.00.....	3.56	0.76	3.27	3.26	0.67	2.95
10.00 but under 11.00.....	6.83	0.72	6.20	6.82	0.69	6.06
9.00 but under 11.00.....	16.12	1.26	15.15	15.96	2.35	14.57
8.00 but under 9.00.....	11.52	1.98	10.54	11.28	2.10	10.21
6.00 but under 7.00.....	9.22	7.65	8.96	9.00	6.99	8.76
5.50 but under 6.00.....	1.93	3.90	2.17	1.64	5.78	2.12
5.00 but under 5.50.....	1.82	8.40	2.40	1.83	9.48	2.64
4.50 but under 5.00.....	2.92	16.17	4.25	2.60	14.06	3.84
4.00 but under 4.50.....	1.16	13.98	3.14	1.76	12.31	2.98
3.50 but under 4.00.....	1.80	8.29	2.46	1.80	13.63	3.18
3.00 but under 3.50.....	2.54	15.68	3.79	2.52	11.83	3.60
2.50 but under 3.00.....	1.33	8.82	2.08	1.12	9.66	2.10
2.00 but under 2.50.....	0.75	5.96	1.28	0.57	6.16	1.23
1.50 but under 2.00.....	0.10	2.66	0.38	0.20	2.72	0.50
Under \$1.50 .....	.....	0.08	0.08	0.01	0.42	0.05
	100.00	100.00	100.00	100.00	100.00	100.00

According to the preceding table 48.43 per cent. of the males received \$9.00 per week or over in 1897, while 49.82 per cent. received this sum in 1898, a small increase for the latter year.

Of the female employes only 2.74 and 2.40 per cent. received \$9.00 per week or over in 1897 and 1898.

In 1897, 85.67 per cent. of the males and 16.08 per cent. of the females received \$6.00 per week and over. In 1898 this percentage stood at 86.06 for the males and 13.84 for the females. The figures as a whole show not only the relative wage position of the sexes, but they indicate that while the course of wages for male employes was upwards, the course for females was of a downward tendency. Exact measurement of the rise and fall in wages can hardly be had under this method of obtaining statistics, but the figures reveal general tendencies in this direction.

The following table gives the percentages of males and females in each wage class in which the two sexes are found:

CLASSIFIED WEEKLY EARNINGS.	PERCENTAGE OF PERSONS EMPLOYED.			PERCENTAGE OF PERSONS EMPLOYED.		
	1897.			1898.		
	Males.	Females.	Aggre- gates.	Males.	Females.	Aggre- gates.
\$25.00 per week and over..	100.00	.....	100.00	100.00	.....	100.00
20.00 but under \$25.00.....	100.00	.....	100.00	100.00	.....	100.00
18.00 but under 20.00.....	100.00	.....	100.00	100.00	.....	100.00
15.00 but under 18.00.....	100.00	.....	100.00	100.00	.....	100.00
13.00 but under 15.00.....	100.00	.....	100.00	100.00	.....	100.00
12.00 but under 13.00.....	100.00	.....	100.00	100.00	.....	100.00
11.00 but under 12.00.....	97.61	2.39	100.00	97.39	2.61	100.00
10.00 but under 11.00.....	98.64	1.36	100.00	98.66	1.34	100.00
9.00 but under 10.00.....	99.10	0.90	100.00	99.22	0.78	100.00
8.00 but under 9.00.....	97.99	2.01	100.00	97.59	2.41	100.00
7.00 but under 8.00.....	97.56	2.44	100.00	98.09	1.91	100.00
6.00 but under 7.00.....	91.40	8.60	100.00	90.71	9.29	100.00
5.50 but under 6.00.....	81.33	18.67	100.00	68.15	31.85	100.00
5.00 but under 5.50.....	64.63	35.37	100.00	59.24	40.76	100.00
4.50 but under 5.00.....	61.47	38.53	100.00	57.36	42.64	100.00
4.00 but under 4.50.....	54.55	45.45	100.00	51.84	48.16	100.00
3.50 but under 4.00.....	65.97	34.03	100.00	50.04	49.96	100.00
3.00 but under 3.50.....	57.81	42.19	100.00	61.46	38.54	100.00
2.50 but under 3.00.....	55.44	44.56	100.00	46.61	53.39	100.00
2.00 but under 2.50.....	52.81	47.19	100.00	42.00	58.00	100.00
1.50 but under 2.00.....	27.17	72.83	100.00	36.72	63.28	100.00
Under \$1.50.....	28.66	71.34	100.00	16.28	83.74	100.00
Averages.....	89.70	10.30	100.00	88.33	11.67	100.00

This table shows the percentages of males and females in each wage-class. In the first six classes there are no females, none being employed at these rates. The percentage for the

males are therefore designated by the full figure or 100. Class \$11.00 but under \$12.00 has 97.61 and 2.39 per cent. of males and females, respectively, in 1897, and 97.39 and 2.61 per cent. in 1898. This means a small gain of females for the latter year. For the four classes which follow this the relations do not vary quite three per cent. Class \$6.00 but under \$7.00 shows 91.40 per cent. of males and 8.60 per cent. for females in 1897 and 90.71 and 9.29 per cent., respectively, for 1898. From this point there is a sharp increase in females, particularly for the latter year. In class \$5.00 but under \$5.50 the proportion of females is more than one-third. In \$4.00 but under \$4.50 the relation stands close to one-half. For the classes below this the percentage of females grows until it constitutes nearly three-fourths of the total for 1897 and considerably above that proportion for 1898.

In the former year only two classes show a greater number of females. The classes thus showing an excess of females are the two last or lowest in the table. For 1898 four show a greater proportion of females and in this case also they are the four lowest. The course for both years is unmistakeable. In the higher wage-classes the males predominate, in the lower the females. As compared with 1897 there was in 1898 an increase in the proportion of females, whether this increase is only temporary or due to a general tendency, the figures do not reveal. Later returns will probably throw some light upon this.

In the following exhibit is found the percentage of persons, classified as to sex and age, in each wage-class.

CLASSIFICATION OF EARNINGS.	Percentages for each wage class as based upon the aggre- gate persons for the class.					Percentages for each wage class as based upon the aggre- gate persons for the class.				
	1897.					1898.				
	Males 18 years or over.	Females 18 years or over.	Males un- der 18 years.	Females under 18 years.	Aggregates.	Males 18 years or over.	Females 18 years or over.	Males un- der 18 years.	Females under 18 years.	Aggregates.
\$5.00 per week and over...	100.00	.....	.....	.....	100.00	100.00	.....	.....	.....	100.00
20.00 but under \$25.00...	100.00	.....	.....	.....	100.00	100.00	.....	.....	.....	100.00
18.00 but under 20.00...	100.00	.....	.....	.....	100.00	100.00	.....	.....	.....	100.00
15.00 but under 18.00...	100.00	.....	.....	.....	100.00	100.00	.....	.....	.....	100.00
13.00 but under 15.00...	100.00	.....	.....	.....	100.00	100.00	.....	.....	.....	100.00
12.00 but under 13.00...	100.00	.....	.....	.....	100.00	100.00	.....	.....	.....	100.00
11.00 but under 12.00...	97.62	2.38	.....	.....	100.00	97.39	2.61	.....	.....	100.00
10.00 but under 11.00...	93.80	1.20	.....	.....	100.00	98.67	1.33	.....	.....	100.00
9.00 but under 10.00...	98.18	0.82	.....	.....	100.00	99.22	0.78	.....	.....	100.00
8.00 but under 9.00...	98.68	1.92	.....	.....	100.00	97.59	2.41	.....	.....	100.00
7.00 but under 8.00...	98.68	2.03	0.88	0.41	100.00	97.41	1.76	0.68	0.15	100.00
6.00 but under 7.00...	98.13	8.25	3.29	0.34	100.00	97.18	8.96	3.54	0.33	100.00
5.50 but under 6.00...	71.21	18.15	10.12	0.52	100.00	58.28	31.56	9.92	0.29	100.00
5.00 but under 5.50...	51.99	34.31	12.70	1.00	100.00	48.67	38.04	10.55	2.71	100.00
4.50 but under 5.00...	26.74	34.67	34.73	3.88	100.00	29.02	40.14	28.34	2.50	100.00
4.00 but under 4.50...	15.23	36.57	39.32	8.88	100.00	17.41	38.52	34.44	9.63	100.00
3.50 but under 4.00...	9.10	16.36	56.87	17.67	100.00	6.66	37.94	43.36	12.04	100.00
3.00 but under 3.50...	3.57	21.77	54.24	20.42	100.00	1.88	16.78	59.63	21.75	100.00
2.50 but under 3.00...	.....	13.15	55.44	31.41	100.00	.....	11.66	46.62	41.72	100.00
2.00 but under 2.50...	.....	15.70	52.80	31.50	100.00	.....	5.31	42.00	52.69	100.00
1.50 but under 2.00...	.....	15.13	27.17	57.70	100.00	.....	2.96	36.77	80.27	100.00
Under \$1.50 .....	.....	10.46	3.49	86.65	100.00	.....	.....	16.42	83.58	100.00
Totals	80.80	7.11	9.00	3.09	100.00	80.07	8.10	8.26	3.57	100.00

The classification in the final wage table is also observed in the above exhibit. The percentages for each year, as shown, relates therefore, to males over 18 years, females over 18 years, males under 18 years and females under 18 years of age. For each wage-class the proportion of persons as thus classified can be obtained. The comparisons possible are many and interesting. The changes in the different relations as between the two years are suggestive and show the trend in wages and employment.

Among the leading facts under wages paid are the following:

The total amount paid as wages was \$36,583,044 in 1897 and \$40,320,703 in 1898. The increase in 1898 is thus \$3,737,659, or 10.21 per cent.

The average yearly earnings to each worker was \$416.79 in 1897 and \$418.92 in 1898. The increase for the latter year thus amounts to \$2.13 or .51 per cent.

Of the aggregate persons employed 43.40 per cent. received

\$9.00 per week or over in 1897, while in 1898 44.42 per cent. received this amount, an increase in 1898 of 1.02 per cent.

Of the persons receiving classified weekly earnings 89.70 per cent. were males and 10.30 per cent. females, in 1897. In 1898, 88.33 per cent. were males and 11.67 per cent. females. This indicates an increase for females of 1.47 per cent.

DAYS IN OPERATION.

Under this head another kind of data was obtained. Each establishment reported the actual number of days in which it was in operation in 1897 and 1898. These facts also were compiled by industries and the average number of days for each industry for the two years, together with the increase or decrease in the number of days in 1898, as compared with 1897 are presented in table XV.

The next exhibit gives separately for each one of the 12 leading industries and for all industries the average number of days in operation in 1897 and 1898. It also shows the increase or decrease in the latter year as compared with the former.

INDUSTRIES.	No of establishments.	AVERAGE NUMBER OF DAYS IN OPERATION.		INCREASE OR DECREASE.	
		1897.	1898.		Days.
Agricultural implements	31	264.22	284.54	+	20.32
Boots and shoes	24	275.12	283.54	+	8.42
Chairs	13	272.23	282.23	+	11.00
Furniture	42	266.74	282.06	+	15.32
Lager beer	71	300.97	302.56	+	1.59
Leather	33	293.03	287.15	—	5.88
Lumber, bith and shingles	168	203.91	200.66	—	3.25
Machines and machinery	86	282.88	296.66	+	13.78
Paper and pulp	34	287.85	289.02	+	1.17
Sash, doors and blinds	73	267.14	265.95	+	8.80
Sheet metal goods	26	286.54	290.74	+	4.20
Wagons, carriages and sleighs	53	287.35	291.06	+	3.71
All industries	1,499	270.81	283.60	+	12.79

This table shows that for all industries the average number of days in operation was 270.81 in 1897, and 283.60 in 1898. This makes an increase for 1898 of 12.79 days or 4.32 per cent.

Among the 12 industries included above, agricultural implements shows the greatest increase, or 20.32 days. These figures are in harmony with the increases in the output and in the use of the various agents of production for this industry.

Next in order in importance comes furniture, machinery, chairs, sash, doors, etc., boots and shoes, sheet metal goods, wagons, etc., lager beer, and paper and pulp. For these industries the increase varies from 15.32 days to 1.17. Two industries, leather and lumber, lath, etc., show a decrease of 5.88 and 3.25 days, respectively.

Of the 57 industries included, 44, or 77.2 per cent., show an increase in the number of days in operation in 1898 as compared with 1897, while 13 or 22.8 per cent. show a decrease. Those showing a decrease are: Boxes (wood and paper), leather, brick, tiles and sewer pipe, cement, lime, plaster, etc., chemical preparations, coal and wood, confectioneries, etc., laundries, lithographing and engraving, lumber, lath and shingles, malt, paints, oils, etc., woolen and worsted goods.

In no case did the decrease exceed over 18 days, while in 7 out of the 13 cases it is less than one week. The increases on the other hand vary greatly, while many industries show only a few days, in others it runs up to one and two months. In one case, that of pig iron, the increase in the time in operation in 1898 foots up to 164 days.

PROPORTION OF BUSINESS DONE.

As may be seen from table XVI, inquiries were also made and data obtained concerning the proportion of business done during 1897 and 1898. Each establishment was requested to state what the proportion of the business during the year bore to the greatest capacity for production. By the greatest capacity was meant the amount of goods that could be turned out with the present plant and facilities when employed to its greatest capacity. The greatest capacity, as thus explained, was expressed by the number 100. Establishments turning out the greatest amount of goods of which their plants were capable, expressed the proportion in this number and establishments having turned out a less amount than this expressed it by a proportionately lower number. For instance, three-fourths of the capacity was expressed by 75, one-half by 50, and one-quarter by 25, and so on.

INDUSTRIES.	No. of establishments.	AVERAGE PROPORTION OF BUSINESS DONE.		INCREASE OR DECREASE.
		1897.	1898.	
Agricultural implements	31	70.20	73.34	+
Boots and shoes	24	76.29	80.33	+
Chairs	13	71.82	75.61	+
Furniture	42	67.14	74.21	+
Lager beer	71	64.34	67.71	+
Leather	33	79.61	74.51	-
Lumber, lath and shingles.....	168	70.00	71.26	+
Machines and machinery	86	68.10	70.09	+
Paper and pulp	34	83.00	84.64	+
Sash, doors and blinds	73	69.76	70.49	+
Sheet metal goods	26	75.00	72.39	+
Wagons, carriages and sleighs	53	71.80	76.27	+
All industries	1,499	71.80	75.64	+

The preceding exhibit shows, on the basis already explained, the proportion of business done in 1897 and 1898, by the leading industries and by all industries in the state, together with increase in 1898, as compared with 1897.

For all industries the proportion of the full capacity of business done was 71.80 for 1897 and 75.64 for 1898, an increase for the latter year of 3.84.

For the 12 leading industries the proportion varies greatly. Thus, agricultural implements comes first in order with 70.20 per cent. This industry greatly increased its facilities during the year as was shown by the increase of about 40 per cent in the amount of capital used. What in this respect is true of this industry is also true of other industries. Furniture follows with 7.07 per cent. is next in importance. Many industries tended their capacity in the early part of 1898. The result of this is that, while their volume of business was much greater during that year, the proportion of the same to their capacity sustains about the same relation as in 1897. Leather is the only industry in this table that gives a decrease and in this the decrease amounts to 5.10 per cent.

In all 57 industries are included, of these 41 or 72 per cent show an increase in the proportion of business done in 1898 and 16 or 28 per cent. show a decrease. The following are among the latter: Boxes, wooden and paper; burial cases, chemical preparations; cigars, etc.; clothing; confectionery, etc.; flour and feed; leather; paints, oils, and brushes; printing supplies; saddlery, harness, etc.; sheet metal goods; soaps;

and potash; trunks, valises, etc.; woolen and worsted goods; miscellaneous.

With a few exceptions the industries thus showing a decrease in 1898 in the proportion of their business are among the less important ones.

Iron (pig) shows an increase in proportion of business of 42 per cent. This is the greatest increase in any industry. The nearest in order is toys, etc., with over 18 per cent. In five cases the increase exceeds this per cent. and in five other instances it is less than one per cent. For the one remaining industry, which constitutes about one-half of the aggregate, the increases in most cases comes close to the average for all industries.

SUMMARIES.

While the more important facts under each head have either been summarized already or presented in such way as to be conveniently found it was considered best to bring together in consecutive space the leading facts as developed in the preceding presentation, and to this purpose the following pages are devoted.

The two next tables are exclusively concerned with the 12 leading industries that were treated separately in the foregoing analysis. They show for each head the results of the comparisons made.

Summaries of the 12 leading industries.

INDUSTRIES.	Increase + decrease - in amount of capital used in 1898 as compared with 1897.	Increase + decrease - in cost of stock in 1898 as compared with 1897.	Increase + decrease - in value of goods made in 1898 as compared with 1897.	Increase + decrease - in amount paid as wages in 1898 as compared with 1897.	Increase + decrease - in average earnings in 1898 as compared with 1897.
Agricultural implements	+\$1,142,255	+ \$123,824	+\$1,592,073	+\$343,197	+ 19.70
Boots and shoes.....	+ 408,693	+ 118,994	+ 278,085	+ 49,435	+ 2.24
Chairs	+ 55,138	+ 72,030	+ 423,931	+ 128,033	+ 4.09
Furniture	+ 334,145	+ 348,147	+ 423,721	+ 95,515	+ 8.93
Lager beer	+ 1,162,953	+ 368,737	+ 299,628	+ 48,967	+ 5.74
Leather	+ 1,968,293	+ 662,460	+ 720,097	+ 26,586	+ 15.42
Lumber, lath and shingles...	+ 5,696,670	+ 1,005,520	+ 2,639,405	+ 635,971	+ 25.12
Machines and machinery.....	+ 2,358,536	+ 655,133	+ 1,631,903	+ 429,722	+ 15.14
Paper and pulp.....	+ 2,555,835	+ 1,604,711	+ 1,963,505	+ 145,455	+ 0.77
Sash, doors and blinds	+ 45,538	+ 39,381	+ 37,724	+ 42,661	+ 24.93
Sheet metal goods	+ 182,950	+ 106,839	+ 107,576	+ 5,493	+ 10.67
Wagons, carriages and sleighs	+ 635,220	+ 375,047	+ 700,794	+ 158,794	+ 27.38

Summaries of the 12 leading industries.

INDUSTRIES.	Increase + decrease — in average persons employed in 1898 as compared with 1897.	Increase + decrease — in smallest persons employed in 1898 as compared with 1897.	Increase + decrease — in greatest persons employed in 1898 as compared with 1897.	Increase + decrease — in excess of greatest over smallest persons employed in 1898 as compared with 1897.	Increase + decrease — in average days in operation in 1898 as compared with 1897.	Increase + decrease — in proportion of business done in 1898 as compared with 1897.
Agricultural implements.....	+ 588	+ 658	+ 900	+ 242	+ 20.32	+ 3.1
Boots and shoes.....	+ 147	+ 112	+ 96	+ 17	+ 8.43	+ 4.0
Chairs.....	+ 394	+ 37	+ 412	+ 375	+ 11.00	+ 3.0
Furniture.....	+ 240	+ 249	+ 294	+ 45	+ 15.32	+ 7.0
Lager beer.....	— 58	— 110	— 93	+ 17	+ 1.59	+ 3.0
Leather.....	— 111	+ 23	— 152	— 175	— 5.88	— 5.0
Lumber, lath and shingles.....	+ 824	+ 1,328	+ 192	— 1,126	— 3.25	+ 1.0
Machines and machinery.....	+ 673	+ 469	+ 527	— 42	+ 13.68	+ 1.0
Paper and pulp.....	+ 375	+ 333	+ 110	— 253	+ 1.17	+ 1.0
Sash, doors and blinds.....	— 126	+ 84	+ 199	+ 115	+ 8.81	+ 0.0
Sheet metal goods.....	+ 93	+ 51	+ 105	+ 54	+ 4.20	+ 2.0
Wagons, carriages and sleighs.....	+ 219	+ 51	+ 322	+ 271	+ 3.71	+ 4.0

Of the two preceding tables the first shows the increase and decrease in 1898 as compared with 1897 in the amount of capital invested, the cost value of the stock or material used, the total value of the goods made, the total amount paid for wages and the average yearly earnings. The second in order shows the increase and decrease in each case, for the average smallest and greatest number of persons employed, the increase or excess of the greatest over the smallest number, the average number of days in operation and the proportion of business done.

These two tables afford excellent opportunities for comparing the various elements considered, and thus for the study of not only of the general trend of each industry, but of the influence upon all changes in one or more elements.

The following 5 industries show an increase for each one of the elements considered: Agricultural implements, chairs, furniture, sheet metal goods, wagons, carriages, and sleighs.

A decrease for some of the elements and an increase for others are found for the following 7 industries: Boots and shoes, lager beer, leather, lumber, lath and shingles, machines and machinery, paper and pulp, sash, doors and blinds.

The following three tables are concerned with the rela-

to the value of the goods made of stock, wages and other expenses and the relation of the value of the goods made to the capital invested and persons employed:

Respective proportion of stock, wages, and other expenses of the total value of the products.

CLASSIFICATION.	1897.		1898.	
	Amounts.	Per cent.	Amounts.	Per cent.
Value of stock used.....	\$98,130,070	57.74	\$112,680,185	58.67
Amounts paid as wages.....	36,583,044	21.53	40,320,703	20.99
Other expenses including profits.....	35,233,559	20.73	39,069,745	20.34
Total value of goods made.....	\$169,946,673	100.00	\$192,070,633	100.00

We see from above table that for 1897 and 1898 the total value of the goods made was \$169,946,673 and \$192,070,633, respectively. Of these amounts for the two years \$98,130,070 and \$112,680,185, respectively, was devoted to stock or materials; \$36,583,044 and \$40,320,703, respectively, was devoted to wages, and \$35,233,559 and \$39,069,745, respectively, were devoted to other expenses and profits.

The outlay for stock constituted 57.74 per cent. of the total value of the goods made in 1897 and 58.67 per cent. in 1898. This is an increase for the latter year of .93 or nearly one per cent. Wages constituted 21.53 per cent. of the value of the product in the first and 20.99 per cent. in the second year. Here we have a decrease for 1898 of .54 or a trifle over one-half of one per cent. Other expenses including profits are found to constitute 20.73 and 20.34 per cent. respectively, for 1897 and 1898, a decrease for 1898 of .39 per cent. The increase in the cost of materials was thus offset by a decrease in each case in wages and other expenses.

By the total value of goods made in this case is meant the entire value or selling price of the product as turned out. At first sight it would seem as if this product during any definite period would constitute, for its whole value an addition to the wealth. This, however, is not the case. The reasons why this gross value cannot be considered for its full amount, an addi-

tion to the social product are several. While a thorough analysis of all the facts in the case is lacking and extremely difficult to make, mention may be made of one of these reasons. It is held that, as the stock or material which enter into factory products of all kinds, consist of other products, which are consumed, destroyed or worked upon in production, the cost value of such material should not be included in ascertaining the value of the product into which it has entered. In some respects this position seems to be well taken and certainly deserves some attention. As the cost value of the material used in this case was obtained and presented separately, a reconstruction of the tables upon this basis can be easily affected. All that is necessary to do to this end is to deduct the cost value of the stock and material used from the total value of the goods made, when cost of material is included and regard the remainder as the net addition to, or total value of the product. The results when this plan is adopted differ entirely from those in the preceding table. This is plainly illustrated in the next exhibit.

Respective proportion of wages, and other expenses of the total value of goods made, less cost of stock.

CLASSIFICATION.	1897.		1898.	
	Amounts	Per cent.	Amounts.	Per cent.
Wages.....	\$36,583,044	50.94	\$40,320,703	50.78
Other expenses including profits.....	35,233,559	49.06	39,069,745	49.22
Value of product less cost of stock.	\$71,816,603	100.00	\$79,390,448	100.00

The preceding table shows for all industries in 1897 and 1898 respectively, the total value of the goods made, less the cost value of the stock entering into it, the total amount paid as wages and for other expenses and the percentage wages and the amount devoted to other expenses, etc., of the total value of the goods made less cost of material.

The value of the goods made, less cost of stock, was \$71,816,603 in 1897 and \$79,390,448 in 1898. Of this wages constituted 50.94 per cent. in the former year and 50.78 per cent. in the latter, while the amount devoted to other expenses and profits was 49.06 and 49.22 per cent., respectively, for the two

years. The variation in the percentages as between the two years is remarkably narrow. Thus we see that the difference is only about one-sixth of one per cent. In the case of wages the highest percentage is that for 1897. In the case of other expenses it is found for 1898.

Of the social cost of the goods, less the cost of stock, over one-half is devoted to the payment of labor. This is plain from the fact that the percentage of wage stood 50.94 and 50.78 per cent., respectively, in 1897 and 1898.

Relation of product to persons employed and capital invested.

CLASSIFICATION.	1897.	1898.	Increase + decrease — in 1898.	
			Number.	Per cent.
Value of goods made to each \$1,000 of capital used	885	971	+ 86	9.71
Value of goods made to each worker (average persons).....	1,942	1,998	+ 56	2.88
Per cent. of goods made of the capital used.....	88.50	97.10	+ 8.60	9.71
Per cent. of goods made, less cost of stock, of capital used.....	37.80	39.90	+ 2.10	5.55

The above table gives the value of the product to each one thousand dollars of capital used; the value of goods to each worker when the average number were employed; the percentage relation of the goods made, including cost of stock to the amount of capital used; and the percentage relation of the value of the goods, less cost of stock, to the amount of capital used.

To each \$1,000 of capital employed \$885 worth of products were turned out in 1897 and \$971 in 1898. For the latter year there is thus an increase of \$86, or 9.71 per cent.

The value of the products or goods made including value of stock, to each worker, when the average number were employed, was \$1,942 and \$1,998 respectively in 1897 and 1898, an increase for 1898 of \$56, or 2.88 per cent.

The percentage relation of the goods made, including stock, to the capital used was 88.5 and 97.1 per cent. respectively for the two years in order.

The percentage relation of the value of the goods made to the

capital used, when the cost of stock was deducted from the value of the goods, was 37.80 and 39.90 per cent. respectively, for 1897 and 1898.

Summaries of the more important facts in Table XVII, or of the table for "all industries."

CLASSIFICATION.	1897.	1898.	Increase + decrease - in 1898.	
			Number.	Per cent.
Number of private firms	625	612	-	13
Number of corporations	612	625	+	13
Number of partners	1,339	1,089	-	250
Number of stockholders	7,872	10,284	+	2,412
Average number of persons employed....	87,534	96,248	+	8,714
Smallest number of persons employed....	70,207	79,663	+	8,456
Greatest number of persons employed	109,839	119,809	+	9,970
Excess of greatest over smallest persons employed	38,632	40,146	+	1,514
Amount of capital used	\$189,760,669	\$198,856,913	+	9,096,244
Cost of stock used	\$98,130,070	\$112,680,185	+	14,550,115
Value of goods made	\$169,946,673	\$192,070,633	+	22,123,960
Amount paid as wages	\$36,583,044	\$40,320,703	+	3,737,659
Average earnings to each worker	\$416.79	\$418.92	+	2.13
Average number of days in operation	270.81	283.60	+	12.79
Average proportion of business done	71.80	75.64	+	3.84

From the above table it is seen that, for all industries considered, the following changes had taken place in 1898 as compared with 1897:

Private firms decrease in number from 625 to 612, a change of 13, or 2.08 per cent.

Corporations increased in number from 612 to 625, a change in the mode of management of 13 establishments.

The number of partners decreased from 1,339 to 1,089, a change of 250, or 18.67 per cent.

The number of stockholders increased from 7,872 to 10,284, a change of 2,412, or 30.6 per cent.

The average number of persons employed changed from 87,534 to 96,248, an increase of 8,714, or 9.95 per cent.

In the smallest number of persons employed, there was a change from 71,207 to 79,663, an increase of 8,456, or 11.9 per cent.

In the greatest number of persons employed there was a change from 109,839 to 119,809, an increase of 9,970, or 9.1 per cent.

In the excess of the greatest over the smallest number of persons employed, there was an increase from 38,632 to 40,146, a change of 1,514 persons, or 3.91 per cent.

The amount of capital invested or used increased from \$189,760,669 to \$198,856,913, a change of \$9,096,244; or 4.79 per cent.

The cost value of the stock and materials used increased from \$98,130,070 to \$112,680,185, a change of \$14,550,115, or 14.82 per cent.

The value of the goods made or work done increased from \$169,946,673 to \$192,070,633, a change of \$22,123,960, or 13.10 per cent.

The amount paid as wages increased from \$36,583,044 to \$40,320,703, a change of \$3,737,659, or 10.21 per cent.

In the average yearly earnings to each person or worker when the average number were employed, there was a change from \$416.79 to \$418.92, an increase of \$2.13, or .51 per cent.

The average number of days in operation changed from 270.81 to 283.60, an increase of 12.79 days, or 4.70 per cent.

The proportion of business done changed from 71.80 to 75.64, an increase of 3.84, or 5.35 per cent.

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PART V.

MANUFACTURERS' RETURNS, 1898-1899.

MANUFACTURERS' RETURNS FOR 1898 AND 1899.

The foregoing part, or Part IV of this report, was devoted entirely to our manufacturing returns for 1897 and 1898. The facts imparted by these returns were there presented, compared and analyzed. The presentations were in all cases made by industries. That is, the aggregates of each element in the various industries were presented separately and in such a way as to readily admit of comparisons, not only as between the same facts for each industry, but as between the two years. The comparisons were mostly limited to showing the increase or decrease in the various elements in 1898 as compared with 1897. In this way the results throw a great deal of light upon the condition in the different industries and upon the course of business during the period. The analysis given serves mainly to explain the facts and the relation between them; also to bring out such facts and relations as were not clearly or directly brought out in the tables.

This, the present part, or Part V, is devoted exclusively to our manufacturing returns for 1898 and 1899. The scope of these returns differ but little from that of those which have been collected in former years. The data cover the same elements and was obtained upon the same basis. No change in the classification of results have been made. Identical establishments are included. The tables in which the data is presented are also the same in form and arrangement. In fact, the only differences between the data in this and former part is, that it covers the business of different years; that in this part fewer establishments are included; that a few new tables showing, by industries, the respective number of hour, day and piecehands have been added here, and that the analysis has not been presented separately, but follows the tables. These changes are plainly

of such nature as not to affect the general plan of these returns, nor interfere with such comparisons with former years as may be found convenient.

As explained previously, annual returns such as those from which the data in this part are compiled has been collected since 1896. The object of these returns is to show from year to year the condition or course of business in our manufacturing industries. The way these facts are brought out is by comparing the returns of the same establishments for two successive years. The presentations are so arranged that the figures which represent the same elements for both years are brought into comparison, and the increase or decrease in the latter as compared with the former year plainly shown. If the figures for the latter year indicate a greater volume of business, an increase in the amount paid as wages and in the number of persons employed, it is only fair to say that these facts point to a healthy condition. If the figures show a decrease in these respects the contrary is likely to be true. This method of arriving at the industrial condition may not be the best. That the results disclosed through it, however, are significant will hardly be questioned.

The first presentations in this series, those for 1896 and 1897, were made in the last report of this bureau. These presentations were based upon annual reports from 1,245 identical manufacturing establishments. The second presentations, in order, are found in the preceding part of this report and cover the years 1897 and 1898. In this case, also, 1,245 establishments were included. The third effort in this line cover the years 1898 and 1899 and will be found in this part. Only 992 establishments are included in this case, or about 253 less than for the preceding investigations. The reasons for covering fewer establishments in this than in former instances is simply this, that, owing to the amount of work on hand, we were unable to visit a greater number and have the results ready for publication at as early a date as desirable. The establishments included, however, are representative, constituting fully 60 per cent. of the productive capacity for the state. The results are also as safe and mean as much as those in the preceding presentations.

The data thus obtained from these returns relates to the fol-

lowing important elements or factors: the number of private firms and corporations; the number of partners and stockholders; the amount of capital invested or used; the cost value of the stock and material consumed; the market value of the products; the amount paid as wages; the monthly number of persons employed; the number of persons employed by the hour, day, or piece; the classified weekly earnings; the number of days in operation, and the proportion of business done.

Private Firms and Corporations, Partners and Stockholders: Upon these points the returns of each establishment showed whether it was under private or corporate mode of management. The returns also gave the number of partners, classified as to sex, when under private management, and the number of stockholders, classified as to sex, when under corporate management. By the above heading is thus meant the respective number of private firms and corporations among the establishments reporting, and the respective number of persons who were interested in these establishments, either as partners or stockholders. Information as to changes in the mode of management of industrial undertakings, and in the number of owners is interesting. In the former case it is so, chiefly for the light it throws upon the present tendency in that respect; and in the latter because of the effect of changes in ownership upon the distribution of wealth.

Capital Invested: By capital invested is here meant the specific amounts invested in lands, buildings, fixtures, machinery, tools, motive power, etc., used in production; the cost value of the stock or raw material and supplies of all kinds entering into the product; the cash used in the business and not included in any of the above items, and cash on hand or in the bank. In short, it means all the capital used, whether owned or borrowed. Correct data of the amount of capital used, or necessary to carry on the business in any industry, is of the greatest importance from many points of view. Collected and properly compared from year to year it usually measures the growth or decline of a business or industry. It shows the amount necessary to carry on a given business or to turn out a given product. The amount of capital in existence is also, under normal conditions, an indication of the productive strength of a country or community.

It has been held that the amount covered by such items as those enumerated above does not include all the capital directly and indirectly employed in production; in fact, that a large proportion of the capital used in any undertaking is of such a nature that it can not even be ascertained, and that for these reasons all efforts to show the capital invested are of little value. This is certainly a broad statement,—a statement that, upon reflection, one must necessarily feel rests upon a rather slender foundation. Productive capital consists of tangible means of production,—means which, measured in money, have a definite price, and which, allowing for depreciation, have an ascertainable value at any time. It is true that in arriving at this value many elements must be considered. But it is also true that these elements are known and that their effect can be determined. The terms under which the capital invested was collected are also so broad that it is difficult to see just where they can fail to embrace practically all the tangible means of production employed by any establishment in operation. The purpose of these inquiries was to find the amount of capital actively employed in production. Dead, abandoned or substituted capital was not wanted. In theory such capital is, to the owner, covered by charges for depreciation and in other ways. A little thought will make it quite plain that there is little of the active capital in almost any plant that can not be fully reported under one or the other of the above heads. At least the proportion necessarily left out must be so small as to be of comparatively little importance. It thus seems that active capital both can be and has been included in the reports. That under such circumstances data concerning it should be of importance needs no proof. Even if the entire investment had not been reached, the facts that the greater proportion is included and that the inquiries have remained uniform from year to year, would alone make the data obtained of considerable value.

Cost Value of Stock and Supplies Used: By this is meant, first, the cost value of all the stock or material used or consumed in obtaining the product; and, second, the cost of supplies of all kinds, such as coal, gas, light, oils, boxes, or material for packing, etc. These items are necessary to all production and can

not be had without cost. To the manufacturer, therefore, they constitute an item of expense that must be considered if his undertaking is to prove a success. As production is carried on for profit, and prices of the products are regulated in the market by forces over which the producer has little or no control, the proportion of the gross income which must be expended for stock and supplies goes a good ways in determining the rate of this profit. In the problem of distribution, therefore, as well as in other ways, the data under this head is of considerable importance.

Amount Paid as Wages: By this is meant here the total amount paid as wages to mechanics, operatives and workers during each year, or in turning out the product as given. This information was obtained in the same way as the other facts presented in this part, namely, by obtaining from each establishment the data representing it; and from this data, in turn, the figures for each industry were computed. To the employer wages are an expense, often the greatest item of outlay in obtaining a given product, or result. To the worker it represents the income upon which he and his family subsists. In most cases it is also the worker's only source of livelihood.

In connection with the value of the product, the amount paid as wages can be made to show the proportion of wages of the total expense in obtaining this product. The amount paid as wages also represents the share of the output that falls to the laborer as a class, and thus shows the amount of this share. With the number receiving it given, the amount to each can also be figured out, and it may be compared with the share of each of the other factors of production. In these and other respects the total amount of wages admit of many interesting and valuable comparisons, from which important conclusions may be drawn. In what is thus termed wages the salaries of agents, officers, clerks and others of this class are *not* included.

Value of Goods Made: This means the total market value or selling price of all the goods manufactured, work done, repairs and re-manufacturing during the year or period covered. In short, it means the selling value of everything that has been produced or done by the establishments making returns. This

is perhaps the most important of all the inquiries made. The real object of the same is to obtain the volume of production from year to year, and thus afford opportunities for comparisons that will show the course of business in the industries represented.

As a whole, it is an extremely difficult matter to ascertain just what is the value of the annual product of a state or country. Strictly speaking, the value reported in the censuses and in other reports of a similar nature is too high. The reason for this is that the value of certain products is duplicated, or reported, more than once. This statement may appear rather strong, but is, nevertheless, a fact. These duplications usually occur in this way: The products of one establishment are often the raw material of another. If, in such cases, the market value of the products for both are reported as the amount of their total output, it is evident that a duplication has occurred, because the product of the first has, for its value, been counted twice,—first as finished products, and second by entering as raw material into another product, the full value of which is also reported. This is well known to statisticians. But, owing to the fact that the same element of error is present in all reports, and at all times, and has caused no misleading conclusions outside of unduly swelling the products, little has been done to correct it. While in a sense it may be looked upon as a defect in the present method, it is a defect that can cause no harm, and hence may be overlooked.

Persons Employed by Months: With this is meant the average number of workers or wage-earners employed each month. The figures were obtained as follows: The number of workers for each week in the month were added together, and the sum obtained divided by the number of weeks. This, of course, gave the average number for the month. The results thus obtained show not only the number employed each month, but the monthly range of employment, and made it possible to show the average number employed during the year. The yearly average arrived at in this way was used as a basis in computing the yearly earnings to each person. Other comparisons are also afforded. On the whole, these returns show as much concerning the condi-

tion as to the time of unemployment as any that has been collected in this state.

Persons Employed by the Hour, Day or Piece: As the heading indicates, the returns under it give the number of persons in each case, classified as to sex and age, who were employed by the hour, day or piece. The returns from each establishment upon these points cover the week in the year during which the greatest number of persons were employed. The results are presented by industries. As a whole, the results throw much light upon certain conditions of employment concerning which comparatively few facts have as yet been presented. They also show the greatest number of persons employed during each year. The week covered is the same as that for which classified weekly earnings was reported. The number of persons included are therefore the same in both cases. Only mechanics, operatives and workers are included here.

Classified Weekly Earnings: The real object of the data under this head is to show the number of persons, classified as to sex and age, who received specified weekly sums in pay for their labor. Each establishment reported this number for the week during which the greatest number were employed. These facts were then compiled by industries and the results for each presented separately. The weekly earnings was computed from the rate per day and six days labor, six days being considered a week's work. Overtime and Sunday labor do not enter into the calculations. The results as thus computed and presented give approximately the weekly earnings of all male and female persons over and under eighteen years of age employed by the establishments reporting.

As said the earnings to each person as reported are not absolute. To obtain and present for each, either the exact rate per day, or the exact earnings, is practically out of the question. The main reasons for this, even for those included here, are their great number, the enormous variation in the rates of wages, the lack of interest in this work, or desire to report correctly, on the part of the workers themselves, even if all could be reached, and the enormous space it would require to publish each report in detail, if obtained. Everything considered, classified

earnings on the basis presented here, will probably furnish as true a picture of the income from labor as any we could have furnished.

The importance of accurate wage-statistics can hardly be over-estimated. Wages alone is the only source from which the larger proportion of the population derive their subsistence. In our manufacturing centers in particular several times as many persons depend upon wages, as upon rent, interest, and profit, or all other sources of income combined. As the income—real perhaps—is at the basis of all social well being and investigation, too much attention can hardly be given to reliable wage-reports.

Days in Operation: In the tabular presentations this means the average time or number of days in operation by the establishments reporting. Each establishment reported the actual number of days in operation. In computing this part days were reduced into full days. The time in actual operation only was included. In this as in other cases the results are presented by industries.

Data as to the actual time in operation is as important, perhaps, as the greater proportion of the other facts presented here. In the first place it has a strong bearing upon the amount of business done. Then again it is of vital interest to the workers. Even a difference of a few days only either way, is felt in their earnings.

Proportion of Business Done: The real object of these inquiries is to furnish comparisons that might be of value to business interests. Each establishment reported the proportion their business for the year bore to their greatest capacity for turning out goods. By this greatest capacity is meant the amount of goods that could be turned out with the present plant and facilities and the greatest number of employes for whom accommodations could be supplied without increase of plant. The greatest capacity was considered 100. Thus any establishment that turned out the greatest amount of goods of which it was capable denoted the volume of their business by this number, or 100; while establishments which turned out but three-quarters of their capacity indicated their proportion by 75 and so on. In connection with the other facts presented this data will be found of considerable value.

As stated already the data which has thus been explained or outlined was collected directly from the manufacturers and cover separately their business for 1898 and 1899. One of the principal purposes of collecting and presenting it was to show the industrial condition during this period. A brief examination of the facts will make it quite plain that they are well suited to this end. Opinions concerning industrial conditions are usually based upon the comparative volume of business done. If the figures representing this volume in 1899 are greater than those for 1898 the conclusion that business was on the increase is almost self-evident. Especially is this true when the same establishments, or undertakings, are included for both years. When this increase in volume is also accompanied by an increase in the capital employed, the amount of stock used up, the number of persons employed, the amount paid as wages, and the time in operation, it is still more conclusive. If, on the other hand, the latter year had shown a smaller volume of business the opposite conclusion would have been arrived at. And had the decrease in volume also been followed by a decrease in the other elements considered, this conclusion would have been still more firmly adhered to. Now, owing to changes in the market, the conclusion is not often effected by when one or more of the elements considered happen to show a tendency opposite from that of the other elements, or from that of the volume of the business done.

The data thus collected is presented, by industries, in the following tables. In all cases the figures for the two years are placed opposite each other. Comparisons are then made, and the increase and decrease in each instance, in 1899 as compared with 1898 is presented both in amount and percentages. The data is classified according to its nature, or kind, as well as to industries. This enables separate presentations for each element. For instance, it permits all the capital invested for all industries to be shown exclusively in one table, while another is devoted entirely to an element of a different nature. The data was carefully edited and compiled. Every possible precaution was taken at every step to bring about correct and reliable results.

In all, 992 establishments are included. These establish-

ments represent 43 industries, or 3 industries less than included in the preceding part. The industries thus omitted are, Food preparations, Printers' supplies, and Straw goods. The reason for this omission is simply that we were unable to obtain an adequate number of reports from these industries in time to have them represented. The value of facts of this kind is closely connected with the time of their publication. In order to have them out at an early date, the work of collecting the data had to end earlier than usual, or before as many plants as formerly had been visited. The industries left out, however, are not of the greatest importance to object in view. With the exception of Food preparations, which may be made to cover a good deal of ground, the industries left out represent, comparatively speaking, few establishments and a very moderate investment. The number of persons employed in them is also limited. For these reasons it was thought they could be left out without materially affecting the results.

PRIVATE FIRMS, CORPORATIONS, PARTNERS AND STOCKHOLDERS.

BY INDUSTRIES, IN 1893.

INDUSTRIES.	Number of establishments.	Number of private firms.	NUMBER OF PARTNERS.			Number of corporations.	NUMBER OF STOCKHOLDERS.			Average partners and stockholders.
			Male.	Female.	Total.		Male.	Female.	Total.	
Agricultural implements.....	26	4	10	.....	10	22	185	40	225	135
Artisans' tools and hardware specialties.....	9	8	13	.....	13	1	3	.....	3	16
Bicycles, tricycles, etc.....	10	7	12	.....	12	3	20	2	22	34
Boots and shoes.....	24	8	12	.....	12	14	105	17	122	134
Boxes (wooden and paper).....	27	17	27	1	28	10	41	8	49	77
Brick, tiles and sewer pipe.....	23	13	27	2	29	10	73	13	86	109
Brooms, brushes & baskets.....	16	14	20	.....	20	2	25	1	26	46
Burial cases, caskets, coffins, etc.....	3	1	2	.....	2	2	13	6	19	21
Cement, lime, plaster, etc.....	9	3	4	.....	4	6	247	26	273	277
Chairs.....	10	2	35	3	38	8	98	17	115	133
Cigars, snuff and tobacco.....	40	47	59	2	61	3	17	.....	17	78
Clothing.....	23	8	20	1	21	15	98	47	145	166
Confectioneries, crackers, etc.....	12	1	1	.....	1	11	64	8	72	73
Cooking and heating apparatus.....	5	2	5	.....	5	3	11	2	13	18
Cooperage.....	15	10	10	.....	10	5	30	1	31	41
Cotton and linen goods.....	6	2	4	.....	4	4	137	53	190	194
Electrical and gas apparatus and supplies.....	17	11	11	.....	11	6	104	19	123	14
Flour and feed.....	65	45	81	3	84	20	402	78	480	561
Furniture.....	38	9	13	.....	13	29	398	29	427	440
Furs, gloves and mittens.....	9	6	14	.....	14	3	8	.....	8	22
Iron goods (malleable).....	24	6	8	2	10	18	162	16	178	188
Knit goods.....	16	3	4	.....	4	13	79	20	99	103
Lager beer.....	57	32	64	5	78	25	239	55	294	427
Leather.....	25	13	22	.....	22	12	3,306	720	4,026	4,044
Lumber, lath and shingles.....	124	48	73	12	85	76	398	66	464	549
Malt.....	16	7	20	.....	20	9	11	11	122	142
Machines and machinery.....	84	42	67	1	68	42	282	83	315	353
Office and saloon fixtures, etc.....	7	4	10	.....	10	3	99	12	111	121
Paints, oils and crude chemicals.....	5	2	4	.....	4	3	9	1	10	14
Paper and pulp.....	31	4	4	.....	4	27	178	26	204	218
Saddlery, harness, etc.....	8	3	7	1	8	5	20	4	24	32
Sash, doors, blinds, etc.....	58	35	70	3	74	23	137	14	151	224
Sheet metal goods.....	23	18	36	.....	36	5	18	2	20	56
Ship and boat building.....	6	4	5	.....	5	2	25	4	29	34
Soap, lye, potash, etc.....	8	5	7	1	8	3	41	5	46	54
Staves and heading.....	15	8	15	.....	15	7	40	1	41	56
Stone, (granite, marble, etc).....	9	6	11	1	12	3	10	.....	10	22
Toys and games.....	5	1	2	.....	2	4	40	3	43	45
Trunks, valises, etc.....	6	1	3	.....	3	5	48	13	61	64
Veneer.....	7	2	2	.....	2	5	38	4	42	44
Wagons, carriages and sleighs.....	39	24	41	2	43	15	297	44	341	344
Woodenware.....	8	3	3	.....	3	5	25	4	29	32
Woolen and worsted goods.....	16	5	7	.....	7	11	79	26	105	112
All industries.....	992	494	863	40	903	498	7,820	1,451	9,271	10,174

PRIVATE FIRMS, CORPORATIONS, PARTNERS AND STOCKHOLDERS.

BY INDUSTRIES, IN 1899.

INDUSTRIES.	Number of establishments.	Number of private firms.	NUMBER OF PARTNERS.			Number of corporations.	NUMBER OF SHAREHOLDERS.			Average partners and stockholders.
			Male.	Female.	Total.		Male.	Female.	Total.	
Agricultural implements..	26	4	8	.....	8	22	182	48	230	238
Artisans' tools, hardware specialties	9	8	12	1	13	1	3	.....	6	16
Bicycles, tricycles, etc.	10	6	9	.....	9	4	26	.....	28	37
Boots and shoes	22	8	14	.....	14	14	127	16	143	157
Boxes (wooden and paper) ..	27	16	26	1	27	11	88	9	97	74
Brick, tiles and sewer pipe ..	23	12	19	1	20	11	58	15	73	93
Brooms, brushes & baskets ..	16	14	32	.....	32	2	21	2	23	55
Burial cases, caskets, coffins, etc.	3	1	2	.....	2	2	13	6	19	21
Cement, lime, plaster, etc.	9	3	16	2	18	6	260	34	293	321
Chairs	10	1	2	.....	2	9	127	18	145	147
Cigars snuff and tobacco.	50	47	63	2	65	3	17	.....	17	82
Clothing	23	8	21	1	22	15	101	52	156	178
Confectioneries, crackers, etc.	12	1	1	.....	1	11	40	7	47	48
Cooking and heating apparatus ..	5	3	7	.....	7	2	8	1	9	16
Copperage	15	10	10	.....	10	5	38	1	39	49
Cotton and linen goods.	6	3	22	2	24	3	124	50	174	198
Electrical and gas apparatus and supplies.	17	6	11	.....	11	11	102	25	127	133
Flour and feed	65	42	66	3	69	23	431	91	522	591
Furniture	38	10	15	.....	15	28	379	33	412	427
Fur, gloves and mittens.	9	7	15	.....	15	2	8	.....	8	23
Iron goods (malleable)	24	6	18	.....	18	18	503	24	527	545
Knit goods	16	3	11	1	12	13	72	18	90	102
Lager beer	57	30	46	16	62	27	313	59	374	436
Leather	25	12	27	.....	27	13	3,101	1,024	4,125	4,152
Lumber, lath and shingles.	124	53	82	10	92	71	406	68	474	566
Malt	16	7	24	3	27	9	1,029	205	1,234	1,261
Machines and machinery.	81	43	51	2	53	41	256	40	296	379
Office and saloon fixtures, etc.	7	4	10	.....	10	3	100	12	112	122
Paints, oils and crude chemicals	5	2	3	.....	3	3	9	1	10	13
Paper and pulp	31	5	12	.....	12	26	169	31	200	212
Saddlery, harness, etc.	8	3	7	1	8	5	19	4	23	31
Sash, doors, blinds, etc.	58	35	81	4	85	23	135	10	145	230
Sheet metal goods	23	18	3	.....	3	5	17	3	20	53
Ship and boat building	6	4	1	.....	5	2	11	1	12	17
Soap, lye, potash, etc.	8	5	7	1	8	3	42	4	46	54
Staves and heading	15	8	17	.....	17	7	42	1	43	60
Stone—granite, marble, etc) ..	9	7	17	1	18	2	9	.....	9	27
Toys and games	5	1	4	.....	4	4	8	3	11	15
Trunks, valises, etc.	6	1	3	.....	3	5	44	14	58	61
Veneer	7	2	3	.....	3	5	28	2	30	33
Wagons, carriages and sleighs	39	24	52	3	55	15	297	54	351	406
Woodenware	8	2	2	.....	2	6	30	4	34	38
Woolen and worsted goods ..	16	5	7	.....	7	11	79	26	105	112
All industries	992	490	923	55	978	502	8,836	2,018	10,854	11,832

The two preceeding tables show, by industries, for 1898 and 1899, respectively, the number of private firms and corporations; and the number of partners and stockholders, classified as to sex. The facts thus presented are interesting and, as a whole, furnish material for many interesting comparisons.

Among the most interesting comparisons that may be made are those which show the increase or decrease in the various elements in the latter year as compared with the former. As the number of industries and establishments is the same for both years, no comparisons in this respect are feasible. The number included, however, suggest many other things. For instance, are they representative? What is their relation to the aggregate for the state? What is the industrial position of this state as compared with other states? Some of these questions have already been answered. Upon others it throws only an indirect light and no answer will be attempted here.

The first elements in order seems to be those which relate to private firms and corporations. These are therefore taken up first and the total for all industries presented in the following exhibit:

Year.	Private firms.	Corporations.	Total.
1898.....	491	498	992
1899.....	490	502	992
Increase or decrease in 1899.....	- 4	+ 4	.....

From this we see that in 1898, 494 of the 992 establishments included, or practically one-half, were under the management of private firms, and that 498 establishments were under corporate management; and that in 1899 this relation had changed to 490 and 502 establishments respectively. In 1899 as compared with 1898 there was thus a decrease of 4 in the number of establishments under private and a corresponding increase in the number under corporate management. This together with former figures indicate a slow but steady tendency towards the corporate mode of management. Perhaps this can also be said to be in full harmony with common observation upon this point.

The facts presented relate to all industries and show the net results, so to say, of all changes both ways which took place among the different industries in this respect. Considered by industries the changes both ways are quite numerous. Thus the tables indicate that 9 industries show a decrease in the number of private firms and an increase in the number of corporations, and that for 7 the opposite facts are true. Of the 43 industries represented 16 thus show changes, while 27 stand for no change whatever.

The industries which show a decrease in the number of private firms and an increase in the number of corporations are: Bicycles, tricycles, etc., boxes (wooden and paper), brick tiles etc., chairs, electrical and gas apparatus, flour and feed, lager beer, leather, stone (granite and marble).

Industries showing an increase in the number of private firms and a corresponding decrease for corporations are: Cooking and heating apparatus; cotton and linen goods; furniture; furs, gloves, etc.; lumber, lath, etc.; machines and machinery; paper and pulp.

The 27 industries which show no change in the mode of organization and management, it was not thought necessary to point out separately.

The facts next in order relate to partners. The following exhibit shows the number of partners, classified as to sex, for each year, and the increase or decrease in the latter, or for 1899 as compared with the former:

Year.	Male.	Female.	Total.
1898	863	40	903
1899	923	55	978
Increase for 1899	60	15	75

In 1898 the total partners thus numbered 903. Of these 863, or 95.57 per cent. were males and 40, or 4.43 per cent. were females. In 1899 the total partners number 978, of whom 923, or 94.38 per cent. were males; and 55, or 5.62 per cent. were females. The figures for 1899 as compared with 1898 thus indicate a relative increase for female partners 1.19 per cent.

The increase in the total number of partners in 1899 as compared with 1898 is seen to be 75. Of this increase, 60 were males and 15 were females, or 80 and 20 per cent., respectively, of the total increase.

Other comparisons are of interest: The male partners numbered 863 in 1898 and 923 in 1899. This is an increase in the latter year of 60, or 6.95 per cent. The female partners numbered 40 and 55. This is an increase in 1899 of 15 or 37.50 per cent. The total number of partners was 903 in 1898 and 978 in 1899. In this case there is an increase of 75, or 8.30 per cent. From this it appears that the respective percentage of increase in the latter as compared with the former year was: males 6.95 per cent., females 37.50 per cent., average for both males and females, or for the total number, 8.30 per cent.

Classifying the industries according to as affected by the above change we find, that 12 show a decrease and 21 an increase in the number of partners, while in 12 industries there was no change in this respect.

Next we have stockholders. To these the next exhibit is devoted. In brief this exhibit gives the respective number of stockholders, classified as to sex, in 1898 and 1899, with the increase for the latter year as compared with the former.

Year.	Male.	Female.	Total.
1898.....	7,820	1,451	9,271
1899.....	8,836	2,018	10,854
Increase in 1899.....	1,016	567	1,583

In this case, as in that of partners, it may be well to, first, take up the figures for each year, and then, when this is done bring those for the two years into comparison.

The total number of stockholders was, as seen above, 9,271 in 1898. Of this number 7,820, or 84.35 per cent. were males and 1,451, or 15.65 per cent. were females.

In 1899 the stockholders numbered 10,854. Of these 8,141, or 74.68 per cent., were males, and 2,018, or 19.59 per cent. females. Between the two years there was thus an increase in the proportion of female stockholders of 3.94 per cent.

The proportion of females in the case of stockholders is thus much greater than in that of partners. In order to make this plain the figures bearing upon it are again presented. In 1898 the male partners constituted 95.57 per cent. and the female 4.43 per cent. of the total number; while for stockholders the percentage stood males 84.35, females 15.65, a difference of 11.21 per cent. In 1899 the position with respect to partners was 94.38 and 5.62 per cent., respectively, for males and females, while for stockholders it was 74.68 and 25.32 per cent., a difference as between the two classes of investors of 19.70 per cent. While in 1899 as compared with 1898 the female partners had increased at a rate of 1.19 per cent., the female stockholders increased 9.71 per cent. This of course represents the relative increase for the two cases.

What is the meaning of this apparently greater readiness or the part of females to become investors in corporations than in private firms. A complete answer to this is difficult. It certainly cannot be gotten out of the returns. This is an investigation of phenomena only. No effort has been made to find the causes of these phenomena. To ascertain and fully explain these causes is probably beyond anything possible by the statistical method alone. The above figures and the circumstances surrounding them suggests that corporations offer more opportunities for investors than private firms. This being so it is perhaps only natural that this should be taken advantage of by women who are looking for investment. The figures also suggest a greater diffusion of ownership in the case of corporations. This fact, if so, would probably tend in the same direction. Upon the diffusion of ownership, however, the figures do not furnish conclusive proof. While they show for about the same number of establishments a much greater number of stockholders than partners the figures given throw no light upon the relative amount invested.

Comparing the number of stockholders for the two years, we find that the males increased from 7,820 to 8,836, or 1,016, which is 13 per cent.; that the females increased from 1,451 to 2,018, or 567, which is 39.1 per cent.; and that the total number increased from 9,271 to 11,832, or 1,561, which is 16.84 per cent.

For stockholders the increase in 1899 as compared with 1898 is much greater than for partners. This becomes particularly plain when the figures are grouped. The respective increases stand as follows: Male partners 6.95 per cent., male stockholders 13 per cent.; female partners 37.50 per cent., female stockholders 39.1 per cent.; total partners, or average increase, 8.30 per cent., total stockholders, or average increase, 16.84 per cent. From this we see that the average rate of increase in the two cases was twice as great for stockholders as for partners. In both instances, however, the increase for females was greater than for males.

While thus there was considerable of an increase in the number of stockholders during the period, this increase was not distributed among all the industries included. This appears from the following figures: Comparing the tables we find that of the 43 industries included, 15 show a decrease and 19 an increase in the total number of stockholders, while 7 show no change in this respect in 1899 as compared with 1898. As the industries showing these changes may be readily ascertained from the tables it was not thought necessary to enumerate them here.

Having considered private firms and corporations, partners, and stockholders, in each case separately, a few lines will be devoted to partners and stockholders combined and to a few other comparisons that naturally grow out of the facts presented.

The following exhibit, also compiled from the facts in the large tables, show separately for 1898 and 1899 the combined number of partners and stockholders.

Partners and stockholders combined.

Year.	Male.	Female.	Total.
1898.....	8,683	1,491	10,174
1899.....	9,759	2,073	11,832
Increase for 1899.....	1,076	582	1,658

The preceding exhibit gives for each year the number of partners and stockholders when combined. Thus in 1898 the total number of partners and stockholders was 10,174. Of these

8,683, or 85.35 per cent. were male and 1,491, or 14.65 per cent. female. In 1899 the total number was 11,832, and of these 9,759, or 82.48 per cent. were males, and 2,073, or 17.52 per cent. females. The increase in the total number in 1899 as compared with 1898 was 1,658. Of these 1,076, or 64.89 were males and 582, or 17.52 per cent. females.

Comparing these figures for the two years we find the following results: The male partners and stockholders increased 1,076 or 12.39 per cent., the females increased 582, or 39 per cent.; the total for both increased 1,658, or 16.5 per cent. In all cases these increases represent the increase in 1899 as compared with 1898.

The next exhibit gives the average number of partners to each establishment:

Year.	Establishments.	Partners.	Average.
1898.....	494	903	1.83
1899.....	490	978	2.00
Increase (+) or decrease (-) in 1899.....	- 4	+ 75	+.17

The purpose of the above exhibit is to show the average number of partners to each establishment under partnership management. This is also shown. The average number of partners to each establishment was 1.83 in 1898, and 2.00 in 1899, an increase for the latter year of a little less than one-fifth of one per cent.

The number of partners to each establishment has thus been shown. In the next exhibit will be found the average number of stockholders to each establishment in 1898 and 1899.

Year.	Establishments.	Stockholders.	Average.
1898.....	498	9,271	18.6
1899.....	502	10,854	21.6
Increase for 1899.....	4	1,583	3.0

We see from this exhibit that the average number of stockholders to each establishment was 18.6 in 1898 and 21.6 in 1899.

This is an increase, for the latter year, of 3 stockholders to each plant.

In the next exhibit the figures in the two preceding presentations have been combined. It therefore shows the average number of partners and stockholders to each establishment for each one of the two years included.

Year.	Establishments.	Partners and stockhold'rs.	Average.
1898.....	992	10,174	10.25
1899.....	992	11,832	11.93
Increase in 1899.....		1,658	1.68

This exhibit shows that the 992 establishments included reported 10,174 partners and stockholders in 1898 and 11,832 in 1899. Computed upon these figures the average to each establishment was 10.25 and 11.93 respectively, for the two years. These figures mean an increase for 1899 of about 1.68 persons.

As seen the foregoing analysis has been mostly limited to the figures representing the totals for all industries and the changes in these as between the two years. The reasons for this are plain. To have gone into details for each industry would require more space than the results would warrant. The real object of this investigation is to show the increase or decrease, from year to year in the different elements, and from this, through comparisons ascertain, if possible, the general trend or tendency. With this, the plan of analysis adopted is in full harmony. It is perhaps, a fact that the data presented has a deeper significance than attached to it here. But a wider application was not intended. As the presentations are made by industries it is obvious that comparisons in each case are possible. Those interested in single industries are therefore enabled to study them in detail. The analysis covers the ground mapped out for it; and the main facts developed by it, or the increase or decrease in the different elements in 1899 as compared with 1898 are here summarized under their respective heads.

Private Firms and Corporations: The former decreased from 494 to 490; the latter increased from 498 to 502. Four

establishments thus changed their mode of management from that of private firms to corporations.

Partners: The partners changed in number from 903 to 978, an increase of 75, or 8.3 per cent. The proportion of male to female partners was 95.57 and 94.38 per cent. respectively for 1898 and 1899. The relative increase for the females, however, was much greater than for males, the rate of increase for the former being 6.95 per cent. while for the latter it was 37.5 per cent. The average partners to each firm was 1.83 and 2.00 respectively, an increase of only .17 for the latter year.

Stockholders: For the two years the respective number of stockholders was 9,271 and 11,832, an increase for the latter of 1,561, or 16.84 per cent. The proportion of males to females was 84.35 and 15.65 per cent. for 1898 and 74.68 and 25.32 per cent. for 1899. The male stockholders increased at the rate of 13 per cent. while for females it was 39.1 per cent. To each corporation the average number of stockholders was 18.6 and 21.6, an increase of three stockholders for the latter year.

Partners and Stockholders Combined: When taken together these two classes of investors show an increase, as between the two years, from 10,174 to 11,832, a difference of 1,658, or 16.5 per cent. The proportion of males and females stood at 85.35 and 14.65 per cent. for the former, and 82.48 and 17.52 per cent. for the latter year. For males the increase was 12.39 per cent., for females 39 per cent. The average number to each establishment increased from 10.25 to 11.93, or 1.68 persons.

CAPITAL INVESTED - BY INDUSTRIES, 1893 AND 1899.

INDUSTRIES.	Number of establishments.	AMOUNT OF CAPITAL INVESTED.		INCREASE (+) OR DECREASE (-) IN 1899.	
		1898.	1899.	Amounts.	Per cent.
Agricultural implements.....	26	\$10,858,532	\$13,420,318	+	\$2,566,786 + 23.64
Artisans' tools and hardware specialties.....	9	700,136	708,028	+	5,892 + 0.84
Bicycles, tricycles, etc.....	10	1,016,671	1,180,493	+	163,822 + 12.74
Boots and shoes.....	22	2,236,946	2,641,962	+	404,976 + 18.10
Boxes (wooden and paper).....	27	1,632,168	1,492,236	-	139,932 - 9.88
Brick, tile and sewer pipe.....	23	1,123,124	805,285	-	317,839 - 28.21
Brooms, brushes and baskets.....	16	112,352	119,368	+	6,516 + 5.77
Burial cases, caskets, coffins, etc.....	3	569,274	597,150	+	27,876 + 4.99
Cement, lime, plaster, etc.....	9	669,473	692,969	+	23,496 + 3.52
Chairs.....	10	3,744,873	4,149,542	+	404,669 + 10.89
Cigars, snuff and tobacco.....	50	1,467,695	1,501,639	+	36,944 + 2.51
Clothing.....	13	2,285,370	2,411,597	+	126,227 + 5.52
Confectioneries, crackers, etc.....	12	1,033,123	1,019,351	-	16,423 - 1.59
Cooking and heating apparatus.....	5	1,057,798	1,110,042	+	52,246 + 4.93
Cooperage.....	15	540,803	541,465	+	3,580 + 0.65
Cotton and linen goods.....	6	786,962	801,816	+	14,854 + 1.89
Electrical and gas apparatus and supplies.....	17	2,333,351	2,403,576	+	50,225 + 2.13
Flour and feed.....	45	6,471,179	6,294,000	-	180,179 - 2.78
Furniture.....	38	2,882,335	3,270,794	+	388,459 + 1.34
Furs, gloves and mittens.....	9	254,824	240,838	-	13,986 - 5.48
Iron goods (malleable).....	24	4,320,817	5,217,297	+	896,480 + 20.74
Knit goods.....	16	1,538,674	2,232,244	+	693,570 + 22.49
Lager beer.....	67	35,307,915	36,164,512	+	856,597 + 2.42
Leather.....	25	12,035,552	13,240,985	+	1,205,433 + 10.01
Lumber, lath and shingles.....	124	33,814,762	37,764,622	+	3,948,860 + 11.67
Malt.....	16	5,209,580	4,262,479	-	947,111 - 18.18
Machines and machinery.....	84	11,240,689	13,001,180	+	1,760,491 + 15.61
Office and saloon fixtures, etc.....	7	517,659	558,771	+	71,112 + 13.73
Paints, oils and crude chemicals.....	5	669,000	701,283	+	35,283 + 5.27
Paper and pulp.....	31	10,719,234	11,827,920	+	1,108,686 + 10.30
Saddlery harness, etc.....	8	210,599	192,663	-	17,936 - 8.51
Sash, doors blinds, etc.....	58	4,411,285	4,862,563	+	451,278 + 10.22
Sheet metal goods.....	23	2,749,066	2,819,312	+	70,246 + 2.55
Ship and boat building.....	6	1,531,487	630,751	-	900,736 - 58.81
Soap, lye, potash, etc.....	8	525,605	508,713	-	16,890 - 3.21
Staves and heading.....	15	303,545	358,558	+	55,013 + 18.12
Stone (granite, marble, etc.).....	9	341,589	410,150	+	68,561 + 20.06
Toys and games.....	5	311,941	393,654	+	51,713 + 13.12
Trunks, valises, etc.....	6	431,437	433,510	+	2,073 + 0.22
Veneer.....	7	273,022	267,604	-	5,418 - 1.98
Wagons, carriages and sleighs.....	39	5,757,682	6,382,750	+	625,068 + 10.85
Woodenware.....	8	1,180,360	1,140,167	-	20,193 - 1.74
Woolen and worsted goods.....	16	1,828,036	1,346,891	-	481,145 - 26.33
All industries.....	992	\$177,388,229	\$190,708,257	+	\$13,320,028 + 7.51

The preceding table shows, for each industry included as well as for all industries, the total amount of capital invested in 1898 and 1899 respectively; and, in amount and percentage, the increase and decrease in the latter year as compared with the former.

Capital is one of the three great factors of production. In taking up this element, attention will be first called to the total

investment for all industries as found in the footings of the table. These footings present the following figures:

Year.	Capital Invested.
1898.....	\$177,388,229
1899.....	190,708,257
Increase in 1899	\$13,320,028
Per cent. of increase.....	7.51

This exhibit shows the total investment each year, and that, in comparing the two, there was a substantial increase for 1899. Thus we find from the exhibit that the amounts invested footed up to \$177,388,229 in 1898 and \$190,708,257 in 1899. For 1899 as compared with the preceding year there was thus an increase in the capital invested of \$13,320,028, or 7.51 per cent.

For all industries when taken together, the latter year thus shows an increase in the capital used. What is thus true of all is not true of each industry. Of the 43 industries included, 32 show an increase in the amount invested, and 11 a decrease.

The industries thus showing less capital in 1899 than in 1898 are: Boxes (wooden and paper); brick, tiles, etc.; flour and feed, furs, gloves, etc.; malt; saddlery, harness, etc.; ship and boat building; soap, lye and potash; trunks, valises, etc.; veneer; woodenware.

With the exception of Flour and Feed, and Malt the industries thus showing a decrease are not among the more important ones in point of investment. Some among them, however, are quite extensive employers of labor and any considerable decline in them or their business might be seriously felt. The figures seems to be in harmony with what is generally known to be the situation. This, at least, is true of Flour and Feed. During the past two years this industry has suffered greatly in this state, because of unfortunate circumstances which caused the partial closing down of some of the largest and best flour mills in the state. Malting business has also experienced some dullness, as was the case in Ship and Boat Building. In both cases the trend is known to have been downwards, and from very much the same causes as were at work in flour milling.

The 32 industries showing an increase it was not thought necessary to repeat. They are so plainly marked in the table and this table is so accessible that it can hardly be improved upon. The greatest relative increase is noticed for agricultural implements. This industry is also known to have enjoyed exceptional prosperity for some time. Together with Knit Goods, Iron Goods, Stone (granite and marble) this industry shows an increase of capital invested of over 20 per cent. Two industries pass 18 per cent. and the other vary from this point down. Lumber shows and increase of 10 per cent. This would seem to contradict what was said about lumber in the preceding part relative to a rather large decrease in capital. The reason for this change is that in this case all temporary establishments, or firms going out of business with the year were excluded.

Other comparisons are possible. Among these are, the average amount of capital to each establishment, and to each partner and stockholder, when the number of these two classes of investors are combined.

The next exhibit in order shows for all industries, the average amount of capital to each establishment in 1898 and 1899 respectively.

Year.	Number of establishments.	Capital Invested.	Average to each establishment.
1898.....	992	\$177,388,229	\$178,819
1899.....	992	190,708,257	192,246
* Increase in 1899.....		\$13,320,028	\$13,427

From these figures we see that in 1898 the average investment to each plant was about \$178,819, while in 1899 it was \$192,246. This is an increase of \$13,427, or 7.51 per cent. to each establishment.

In the following exhibit will be found the average investment to each partner and stockholder:

Year.	Partners and stockholders.	Capital invested.	Average to each partner and stockholder.
1898.....	10,174	\$177,388,229	\$17,435
1899.....	11,822	190,708,257	16,118
Increase (+) or decrease (-) 1899	+ 1,658	+ \$13,320,028	- \$1,317

The above exhibit shows that in 1899 as compared with 1898 there was a decrease in the average amount of capital to each partner and stockholder. This is plain from the following facts. In 1898 the average investment to each one of the 10,174 partners and stockholders was \$17,435, in 1899 it was \$16,118 to each of 11,832 partners and stockholders. There is thus a difference of \$1,317 or a decrease for the last year of 7.56 per cent.

From the facts thus presented it is evident that of the 43 industries included, 32 showed an increase in the capital invested and 11 a decrease; that for all industries the capital invested increased from \$177,388,229 in 1898 to \$190,708,257 in 1899, an increase of \$13,320,028 or 7.51 per cent.; that the average amount of capital to each establishment increased from \$178,819 in 1898 to \$192,246 in 1899, a difference of \$13,427, or 7.51 per cent.; that the amount of capital to each partner and stockholder decreased from \$17,435 in 1898 to \$16,118 in 1899, a difference of \$1,317 or 7.56 per cent. A few facts tending to show that the respective increases and decreases seems to be in full harmony with other facts leading to the same conclusions.

STOCK OR MATERIAL USED - BY INDUSTRIES, 1898 AND 1899.

INDUSTRIES.	No. of establishments	VALUE OF STOCK OR MATERIAL USED.		INCREASE (+) OR DECREASE (-) IN 1899.	
		1898.	1899.	Amounts.	Per cent.
Agricultural implements.....	26	\$2,248,463	\$3,098,301	+	\$849,838 + 37.79
Artisans' tools and hardware specialties.....	9	270,472	322,944	+	52,472 + 19.40
Bicycles, tricycles, etc.....	10	1,007,967	771,413	-	236,554 - 23.48
Boots and shoes.....	22	2,032,484	2,771,826	+	739,342 + 36.38
Boxes (wooden and paper).....	27	1,056,602	1,451,098	+	394,496 + 37.31
Brick, tile and sewer pipe.....	23	90,921	105,248	+	17,327 + 19.05
Brooms, brushes, and baskets.....	16	65,102	91,084	+	25,982 + 39.90
Burial cases, caskets, coffins, etc.....	3	201,990	277,000	+	75,010 + 37.13
Cement, lime, plaster, etc.....	9	249,992	478,942	+	228,950 + 91.65
Chairs.....	10	1,085,169	1,213,711	+	128,542 + 11.81
Cigars, snuff and tobacco.....	50	1,305,416	1,616,894	+	311,478 + 23.58
Clothing.....	23	2,373,924	2,666,725	+	292,801 + 12.33
Confectioneries, crackers, etc.....	12	1,202,703	1,420,997	+	218,294 + 18.15
Cooking and heating apparatus.....	5	501,781	577,780	+	75,999 + 15.14
Cooperage.....	15	441,185	476,491	+	35,306 + 7.10
Cotton and linen goods.....	6	319,981	352,773	+	32,792 + 10.24
Electrical and gas apparatus and supplies.....	17	879,670	1,019,286	+	139,616 + 15.98
Flour and feed.....	65	19,543,411	12,980,596	-	6,562,815 - 33.73
Furniture.....	38	1,571,194	1,990,589	+	419,395 + 26.78
Furs, gloves and mittens.....	9	237,140	268,980	+	31,840 + 13.42
Iron goods (malleable).....	24	3,785,939	5,650,193	+	1,864,254 + 49.24
Knit goods.....	16	928,289	1,141,841	+	213,552 + 23.00
Lager beer.....	57	3,978,953	4,232,674	+	253,721 + 6.37
Leather.....	25	10,342,086	12,214,627	+	1,872,541 + 18.10
Lumber, lath and shingles.....	124	10,677,418	13,674,721	+	2,997,303 + 28.06
Malt.....	16	2,744,257	2,726,786	-	17,471 - 0.63
Machines and machinery.....	84	3,961,822	4,806,303	+	844,481 + 21.36
Office and saloon fixtures, etc.....	7	264,678	331,450	+	66,772 + 25.23
Paints, oils and crude chemicals.....	5	650,921	841,570	+	190,649 + 29.25
Paper and pulp.....	31	4,717,831	5,481,367	+	763,536 + 16.18
Saddlery, harness, etc.....	8	248,314	342,891	+	94,577 + 38.08
Sash, doors, blinds, etc.....	55	2,341,387	3,102,578	+	761,191 + 32.51
Sheet metal goods.....	23	1,907,078	2,172,063	+	264,985 + 13.89
Ship and boat building.....	6	349,142	319,725	-	29,417 - 8.38
Soap, lye, potash, etc.....	8	475,646	522,421	+	46,775 + 9.85
Staves and heading.....	15	138,318	163,690	+	25,372 + 18.34
Stone (granite, marble, etc.).....	9	83,694	115,489	+	31,795 + 37.98
Toys and games.....	5	119,926	123,716	+	3,790 + 3.10
Trunks, valises, etc.....	6	190,458	233,833	+	43,375 + 22.77
Veneer.....	7	135,503	135,503	+	48,092 + 35.49
Wagons, carriages and sleighs.....	39	2,404,938	2,563,607	+	158,669 + 6.59
Woodenware.....	8	848,882	907,453	+	58,571 + 6.89
Woolen and worsted goods.....	16	913,915	908,408	-	5,507 - 0.60
All industries.....	992	\$38,944,925	\$66,958,104	+	\$28,013,179 + 72.01

The foregoing table relates entirely to the stock or material used in production. Briefly it can be said to show for each one of the industries included as well as for all of these industries, the cost value of all the materials and supplies which were consumed in, or entered into the product, in 1898 and 1899 respectively.

What is meant by stock or raw material? This has been explained so often in connection with statistics of this kind and is

so well understood that nothing can be added to the sum total of this matter here. Raw material may consist of both finished products, and goods which come direct from nature and is used without first having been subjected to any manufacturing process. The value of such material enters into the product into which it is being converted and the outlay connected with obtaining it becomes, like all other expenses, a part of the selling price of this product. The nature of the stock and material is also pointed out in the introduction to this part.

The following exhibit shows, for all industries in 1898 and 1899 the total cost value of all the materials and supplies used together with the increase in the cost for 1899 as compared with the preceding year.

Year.	Value of stock
1898.....	\$88,944,925
1899.....	96,958,104
Increase for 1899.....	\$8,013,179
Per cent of increase.....	9.01

According to these figures the cost value of the stock or materials used was \$88,944,925 in 1898, and \$96,958,104 in 1899. Comparing these items there is thus found an increase for the latter year of \$8,013,179, or 9.01 per cent. The increase in this case, or for stock, is about one and one-half per cent. greater than the increase in the amount of capital used during the same years.

As seen 43 industries are included in this. Of these 38 show an increase in the cost value of the stock used and 5 a decrease. Those showing a decrease are: Bicycles, tricycles; flour and feed; malt; ship and boat building; woolen and worsted goods.

Comparing the industries here which thus show a decrease with those showing an increase of capital invested the following differences are noticed. In point of number there is a difference of 6, or 5 under this head, as against 11 under capital. In all but three cases, Flour and Feed, Malt and Ship and Boat Building, the industries in which the decrease occur differ in

kind. In cases where the industries are the same, the relative proportion of decrease also seems to differ greatly. These points are not important. Still they are of such a nature that they are likely to be considered.

The 38 industries which, as has been said and as indicated is in the table, show an increase in the value of the stock used up are not presented again. It was not thought necessary to consider them in detail. They appear prominently in the table. They also convey their own explanation. In most cases the increase is due to the increase in the quantity consumed. That the quantity used the last year was greater than for the first, necessarily follows from the fact that the last year shows a greater volume of production.

It is possible that a comparison of the increases in this and in the table for capital might reveal something of interest. That the figures in the two tables ought to point towards the same tendencies is apt to be the first impression. This, however, the figures often fail to do. Fluctuations in the price of raw material, and investment for other purposes may easily throw the figures in the two cases out of all harmony with each other.

Other comparisons are possible. Among other things it might be interesting to know the relation between the capital invested and the amount expended for raw material. This is easily ascertained.

In 1898 the total investment was \$177,388,229, and the total outlay for stock \$88,944,925. In this case the cost value of the stock constitutes 50.14 per cent. of the capital. In other words for each \$1,000 invested \$501.40 was expended for stock.

In 1899 the total investment was \$190,708,257 and the outlay for stock \$96,958,104. Here the stock covers 50.84 per cent. of the capital, or \$508 for every \$1,000 invested.

The relation, for the two years, between the amount invested and the amount expended on stock is very close. In fact it varies less than two-thirds of one per cent.

This analysis thus shows that the cost value of the stock used increased from \$88,944,925, in 1898 to \$96,958,104, in 1899, a difference of \$8,013,179, or about 9.00 per cent.; that 38 of the 43 industries showed an increase while 5 showed a decrease; that

cost value of the raw material constituted 50.14 per cent. of the capital invested in 1898 and 50.8 per cent. in 1899. Concerning the respective increase and decrease for capital and stock, it was seen that although the same tendency could be observed the relation was not very close.

WAGES PAID - BY INDUSTRIES, 1898 AND 1899.

INDUSTRIES.	No. of establishments.	TOTAL AMOUNT OF WAGES PAID DURING THE YEARS		INCREASE (+) OR DECREASE (-) IN 1899.	
		1898.	1899.	Amount.	Per cent.
Agricultural implements.....	26	\$1,257,033	\$1,464,971	+ \$207,938	+ 16.51
Artisans' tools & hardware specialties.	9	35,854	37,728	+ 1,874	+ 5.22
Bicycles, tricycles, etc.....	10	381,376	253,542	- 127,834	- 33.59
Boots and shoes.....	22	581,012	719,480	+ 138,474	+ 5.64
Boxes (wooden and paper).....	27	397,294	408,189	+ 10,895	+ 2.74
Brick, tile and sewer pipe.....	23	114,577	121,913	+ 7,336	+ 9.03
Brooms, brushes and baskets.....	16	44,331	55,330	+ 11,039	+ 24.94
Burial cases, caskets and coffins.....	3	105,742	123,813	+ 18,051	+ 17.07
Cement, lime, plaster, etc.....	9	80,797	125,985	+ 45,188	+ 55.92
Chairs.....	10	956,191	916,809	- 39,382	- 0.98
Cigars, snuff and tobacco.....	50	338,123	370,598	+ 32,475	+ 10.25
Clothing.....	23	713,659	768,210	+ 54,551	+ 7.64
Confectioneries, crackers, etc.....	12	218,515	267,365	+ 48,850	+ 22.35
Cooking and heating apparatus.....	5	477,803	501,754	+ 23,951	+ 5.64
Cooperage.....	15	199,334	181,815	- 17,519	- 9.29
Cotton and linen goods.....	6	11,297	11,823	+ 526	+ 4.03
Electrical & gas apparatus & supplies.....	17	478,632	527,071	+ 48,442	+ 10.11
Flour and feed.....	65	501,089	407,707	- 93,381	- 19.11
Furniture.....	38	745,242	880,182	+ 134,950	+ 15.42
Furs, gloves and mittens.....	9	61,832	67,724	+ 5,892	+ 9.52
Iron goods (malleable).....	24	1,695,302	2,298,913	+ 593,611	+ 3.50
Knit goods.....	16	416,212	527,322	+ 111,110	+ 28.09
Lager beer.....	57	1,351,366	1,459,129	+ 107,763	+ 6.49
Leather.....	25	1,616,732	1,762,391	+ 145,659	+ 9.03
Lumber, lath and shingles.....	124	4,034,355	5,468,906	+ 1,434,551	+ 31.20
Malt.....	16	282,815	224,257	- 58,558	- 20.71
Machines and machinery.....	84	2,661,617	3,240,303	+ 578,686	+ 21.79
Office and saloon fixtures, etc.....	7	165,310	199,249	+ 33,939	+ 20.56
Paints, oils and crude chemicals.....	5	35,897	53,173	+ 17,276	+ 48.12
Paper and pulp.....	31	1,245,344	1,330,338	+ 85,194	+ 6.08
Saddlery, harness, etc.....	8	80,353	91,335	+ 11,027	+ 13.72
Shed, doors, blinds, etc.....	58	953,325	1,111,282	+ 157,957	+ 16.56
Sheet metal goods.....	23	571,807	590,401	+ 18,594	+ 3.25
Ship and boat building.....	6	306,678	352,330	+ 45,652	+ 11.02
Soap, lye, potash, etc.....	8	56,017	61,064	+ 5,047	+ 10.79
Saves and heading.....	13	99,302	101,813	+ 2,511	+ 5.57
Stone (marble, granite, etc.).....	9	64,001	80,080	+ 16,079	+ 25.13
Toys and games.....	5	33,492	90,644	+ 57,152	+ 8.56
Trunks and valises, etc.....	6	85,536	101,815	+ 16,272	+ 18.96
Veneer.....	7	96,093	125,698	+ 29,605	+ 30.80
Wagons, carriages and sleighs.....	39	1,080,038	1,184,719	+ 104,681	+ 11.76
Woodenware.....	8	443,347	481,880	+ 38,533	+ 7.47
Woolen and worsted goods.....	16	238,361	261,867	+ 23,506	+ 1.30
All industries.....	992	\$25,921,041	\$29,519,468	+ \$3,598,427	+ 13.85

The preceding table is devoted entirely to wages. It shows, for each industry and for all industries, the total amount paid as wages in 1898 and 1899. The increase in the amount paid the latter year as compared with the former is also presented.

By wages is here meant the amount paid mechanics, operatives and workers who performed the labor required in turning out the products of the years in question. This amount is the direct share of labor in the manufacturing process. It constitutes the share of one of the three great elements in distribution, namely that of labor. Of these elements wages is perhaps the most important. More persons derive their subsistence from wages than from all the other elements combined. In all social studies, wages, the total amount paid, the amount to each worker, its relation to the other elements, is the first question considered.

In considering the table as a whole there are many interesting facts to be noticed. In the first place we find that the figures for each industry are given separately. This is of interest because it facilitates the study of each industry in detail. In all, 43 industries are included. Examining these we find that 36 paid more wages in 1899 than in 1898, and that 7 paid less.

The industries showing a decrease in 1899 as compared with 1898, are bicycles and tricycles, chairs, cooperage, flour and feed, malt, ship and boat building, woolen and worsted goods.

The decrease as between the industries vary. For bicycles it is the greatest. In this industry the decrease amounts to 30.89 per cent. In the other six it is less than this. For two, however, it is close to 20 and for two others about 10 per cent., while again two show about one per cent. The causes of the decrease in these cases seem to be only temporary in their nature.

The 36 industries showing an increase will not be enumerated again. Their position in the table and their relative number makes this unnecessary. As to the increase as between the industries varies greatly. In one case it is nearly 56 per cent. In another about 48 per cent. Two industries show an increase of about 30, and in eight the range is from about 20 to about 30 per cent. In the majority of cases, however, the increase is below 20 per cent.

The following exhibit gives, for all industries, the total

amount of wages paid in 1898 and 1899, respectively, also the increase in 1899 as compared with 1898:

Year.	Amounts paid as wages.
1898.....	\$25,921,041
1899.....	29,519,468
Increase in 1899.....	3,598,427
Per cent. of increase.....	13.88

We see from this that the total amount paid as wages, by all industries, was \$25,921,041 in 1898 and \$29,519,468 in 1899; and that thus there was an increase for the latter year of \$3,598,427, or 13.88 per cent.

This increase in the case of wages is of considerable importance. It is greater relatively than the respective increases for capital stock and goods made. This fact necessarily means that in the expansion of business which has taken place during the past year wages has fully held its own.

In the next exhibit we find the proportion of the capital used which was paid for stock and labor.

Year.	Capital.	For other purposes.	For stock.	For wages.
1898.....	\$100	\$36 25	\$50 14	\$14.61
1899.....	100	38 68	50 84	15.48

We see from the preceding exhibit that for each one hundred dollars of capital used in 1898, \$50.14 was paid out for stock or materials and \$14.61 for wages or labor; and that in 1899 the outlay for stock and wages was \$50.84 and \$15.48, respectively, to each one hundred dollars of capital. For both stock and wages the proportion slightly increased in 1899 as compared with 1898. These comparisons are not of the greatest importance, but are interesting because the relations seem to be in harmony with the general trend throughout these exhibits.

GOODS MADE AND WORK DONE—BY INDUSTRIES, 1898 AND 1899.

INDUSTRIES.	No. of establishments.	VALUE OF GOODS MADE AND WORK DONE.		INCREASE OR DECREASE IN 1899.	
		1898.	1899.	Amounts.	Per cent.
Agricultural implements.....	28	\$5,726,507	\$7,412,621	\$1,686,117	+ 29.46
Artisans' tools and hardware specialties.....	9	761,888	962,918	221,030	+ 29.01
Bicycles, tricycles, etc.....	10	1,804,141	1,390,215	401,896	- 22.44
Boots and shoes.....	22	3,612,988	4,392,627	779,639	+ 21.57
Boxes (wooden and paper).....	27	1,767,109	2,308,216	626,107	+ 35.43
Brick, tile and sewer pipe.....	23	408,128	365,127	56,999	- 18.49
Brooms, brushes, etc.....	16	156,988	212,100	55,162	+ 35.18
Burial cases, caskets and coffins, etc.....	8	81,104	498,250	97,147	+ 24.96
Cement, lime, plaster, etc.....	9	541,375	1,027,508	486,133	+ 89.79
Chairs.....	10	2,752,890	2,791,724	38,834	+ 1.41
Cigars, snuff and tobacco.....	50	2,209,134	2,696,879	487,745	+ 22.07
Clothing.....	23	4,067,481	4,530,547	463,066	+ 11.33
Confectioneries, crackers, etc.....	12	1,945,610	2,437,422	491,812	+ 25.27
Cooking and heating apparatus.....	5	1,375,566	1,611,896	236,330	+ 17.18
Cooperage.....	15	797,458	817,187	19,729	+ 2.47
Cotton and linen goods.....	6	557,506	567,928	10,422	+ 5.45
Electrical and gas apparatus and supplies.....	17	2,224,118	2,604,241	380,123	+ 17.09
Flour and feed.....	65	22,274,839	15,282,928	6,991,911	- 31.40
Furniture.....	38	2,909,302	3,405,545	496,243	+ 14.69
Furs, gloves and mittens.....	9	387,687	455,618	67,931	+ 17.32
Iron goods (malleable).....	24	7,472,765	11,291,839	3,819,074	+ 51.10
Knit goods.....	16	1,906,761	2,235,483	328,727	+ 17.24
Lager beer.....	5	16,596,864	18,113,738	1,526,894	+ 9.21
Leather.....	25	13,533,436	15,333,150	1,809,712	+ 14.77
Lumber, lath and shingles.....	124	19,647,430	26,406,539	6,769,109	+ 34.06
Malt.....	16	4,116,591	4,370,057	253,466	+ 6.16
Machines and machinery.....	84	9,488,651	11,448,346	1,959,695	+ 20.65
Office and saloon fixtures, etc.....	7	563,963	714,816	150,943	+ 26.77
Paints, oils and crude chemicals.....	5	548,254	1,182,041	304,787	+ 55.84
Paper and pulp.....	31	7,882,692	9,398,240	1,515,548	+ 19.61
Saddlery, harness, etc.....	8	408,713	518,858	110,142	+ 26.94
Sash, doors, blinds, etc.....	58	4,279,453	5,291,985	1,012,532	+ 23.96
Sheet metal goods.....	23	3,275,789	4,036,427	760,638	+ 22.91
Ship and boat building.....	6	1,002,948	701,150	294,796	- 29.39
Soap, lye and potash.....	8	734,806	824,905	90,399	+ 12.16
Staves and heading.....	15	324,800	360,077	35,286	+ 10.88
Stone (marble, granite, etc.).....	9	250,892	301,620	50,728	+ 20.31
Toys and games.....	5	290,268	281,986	1,718	- 0.61
Trunks, valises, etc.....	6	412,486	497,500	85,014	+ 20.61
Veneer.....	7	375,293	456,871	110,578	+ 29.19
Wagons, carriages and sleighs.....	39	4,772,203	5,453,962	681,759	+ 14.71
Woodenware.....	8	1,724,694	1,951,643	226,949	+ 7.36
Woolen and worsted goods.....	16	1,569,342	1,557,060	12,282	- 1.99
All industries.....	992	\$158,253,747	\$178,692,703	\$20,438,956	+ 12.91

We have now reached a point where the output of the establishments in question can be considered. The basic presentations under this head are found in the preceding page. In form and arrangement generally this table resembles very much those in which the data for the other elements have been presented.

Thus it shows, for each industry and for all industries, the total value of the goods made in 1898 and 1899, and the increase and decrease in the latter year as compared with 1898.

Of all the facts collected none has a greater bearing upon the object for which they are presented than those under this head. It is the volume of production which after all constitutes the real measure of the growth or decline in any industry. Except perhaps in isolated instances it is true of practically all other elements that they follow production. When more goods is turned out more capital is required, more raw material is consumed, and more help is employed. It is not always true that a change in the product is immediately followed by changes in the other elements. Better methods of management, changes in prices cause more or less variation. This accounts largely for the fact that in several industries some elements show an increase while others have a decrease. Such conditions, however, are seldom found except where the differences between the years are small. The general tendency is the same. When changes from year to year are great the figures usually show the same trend.

Many interesting comparisons are possible. First, we have the totals for each year, for all industries and for each industry. A comparison of these will reveal the changes bearing upon the course of business and offer excellent opportunities for analysis. Then there are the relations between the product and each element contributing to it. These are often both interesting and valuable.

The exhibit first in order is devoted to the totals for all industries. It shows the total market value of the product for each year, and the increase in 1899 as compared with the year preceding it.

Years.	Market value.
1898.....	\$158,258,747
1899.....	178,692,708
Increase in 1899.....	20,433,968
Per cent. of increase.....	12.91

The figures representing the totals for all industries in 1898 and 1899 are here brought together. In examining these figures we find that the market value for the entire product was \$158,-

258,747 and \$178,692,705, respectively, for these two years. For 1899, as compared with 1898, there was thus an increase of \$20,433,958, or 12.91 per cent. This increase is somewhat greater than those for capital and stock which have already been explained.

Each one of the 43 industries included do not show an increase for 1899. This we see from examining the table. The number showing a decrease is very small, being only four as against 39 having an increase. The four industries in which business seems to have been under the weather are: Bicycles, etc., Flour and Feed; Ship and Boat Building, and Woolen and Worsted Goods.

As to the causes of these decreases the figures, as already explained, disclose nothing. They were not collected with any such object in view. Their immediate purpose is to show the volume and trend of business in this state. To the causes for any fluctuation that might appear in this respect they were extended for several reasons. To begin with, the statistical method alone would hardly be sufficient for this. Then again our work is necessarily confined to this state and a thorough investigation of the industries in question would necessarily have to cover the whole country. From conditions in general, however, it is well known that the industries showing a decrease have, for some time, been at a disadvantage. Owing, perhaps to a general over-production in these lines, in the past, combinations seemed to have been formed that, as yet, have had anything but favorable results upon these industries in Wisconsin. What the future brings remains to be seen. It is likely that, in time, conditions will adjust themselves upon a basis that will enable the removal of the present restrictions.

In all 39 industries show an increase in the goods made. In most cases this increase is of such a substantial nature as to be unmistakable. In two instances it exceeds 50 per cent. In four others it is above 33 per cent., and in fifteen others it varies between this figure and 20 per cent. Only eight industries show less than a 10 per cent. increase. These figures are full of meaning. While a part of this increase is due to higher prices there is no doubt about the fact that it also indicates a larger product.

A comparison of the product with the capital employed in obtaining the same ought to furnish an interesting theme. Accordingly the next exhibit is devoted to this:

Year.	Capital invested.	Value of product.	Per cent.
1898.....	\$177,888,229	\$158,258,747	112.10
1899.....	190,708,257	178,692,705	106.67

According to these figures more than one dollar of capital was required to turn out one dollar's worth of goods. For both years the capital is greater than the product. In 1898 the relation was 112.10 per cent. In 1899 it was 106.67 per cent. Proportionately less capital was thus employed in the latter year than in the former. In other words, for each \$100 of product \$112 of capital was used in 1898, and for each \$100 of product \$106 of capital was used in 1899.

This relation between capital and product may at first seem a little out of the way. Census and many other reports usually show that somewhat less than a dollar's worth of capital is ordinarily employed in obtaining products valued at this amount. The preceding figures, however, indicate precisely the reverse of this. In 1898, 112 dollars were employed in turning out a product valued at 100 dollars. Now the question may be asked, how can this variation be accounted for? Are the returns misleading? No, the returns are correct. The difference in the relations in the two cases arises mostly from a difference in the methods employed. A census usually includes all establishments, whether large or small. The returns included here do not cover all the establishments in the state, but only a part of them, or the larger and representative ones, from a productive point of view. Now it is well established that the larger plants employ more capital in proportion to the product than smaller ones. It is in these facts that the explanation is found. Since the larger plants employ more capital, and since the figures for this part are computed mostly from the returns of larger plants, it was only to be expected that the proportion of capital shown by them should be greater. But besides this there may be other

causes. Capital as a factor in production is constantly increasing. This brings in the question of time. As conditions are thus changing it is obvious that what was true some time ago may not be true today. While instructed to the contrary, it is not impossible but that some establishments, in reporting, the value of their plant, gave what they considered its earning value, instead of its cost, and that this capitalized value was higher than that based on cost or replacing. If this was done under such circumstances that fact alone would, of course, tend towards giving a higher figure for the capital used. There was nothing to show, however, that this method of valuation was ever resorted to. The figures for the capital presented here are in full harmony with those for 1896 and 1897, and they disclosed no facts which indicated that they were not accurate.

Another comparison to be made is that between stock, wages and other expenses, respectively, on one hand and the value of the goods made on the other. These will be found in the following exhibit:

CLASSIFICATION.	1898.		1899.	
	Amount.	Per cent.	Amount.	Per cent.
Stock	\$38,944,925	57.46	\$36,958,101	54.26
Wages.....	25,921,041	16.37	29,519,468	16.52
Other expenses.....	43,382,781	26.17	52,215,133	29.22
Value of goods made.....	158,258,747	100.00	178,692,705	100.00

Here we find the relation which each of the various elements of expense bears to the total value of the goods made. Stock is the first item in order. In 1898 the outlay for material and supply amounted to 57.46 per cent. of the value. In 1899 this outlay was 54.26 per cent. The proportion of the outlay devoted to raw material or stock was, therefore, somewhat greater in 1898. Wages comes next. The outlay for this purpose in 1898 and 1899 was 16.37 and 16.52 per cent., respectively, or almost identical for the two years.

Other expenses comes the third in order. In this item is included both interest and profit and all expenses which do not come under stock and wages. In 1898 other expenses covered

26.17 per cent., and in 1899, 29.22 per cent. of the total value of the product.

What do these facts mean? Much more than can be explained here. In one respect they have close bearing to the problem of distribution. In another they reveal the nature of some of the greater expenditures in production. They show that in order to obtain one hundred dollars' worth of product the manufacturers must expend from fifty-five to sixty dollars for material, about seventeen for labor and from twenty to thirty dollars for depreciation, discounts, repairs, taxes, insurance, salaries and other expenses, together with interest and profit. The fact that profit and at least a part of the interest goes to the manufacturers themselves in return for their risks, management and investment, do not affect the results from a social point of view. To society profits and interest are as much of an expense as wages.

There are some features in the relation of expenses and product which may not seem exactly in harmony. One of these concerns stock or material. In 1898 we find that the outlay for stock amounted to 57.46 per cent. of the value of the product, while in 1899 it footed up only 54.26 per cent. Here is apparently a reduction of 3.20 per cent. in one class of expenses in the latter year. Now to what cause or causes is this reduction due? Is it due to errors in the returns or their compilation? Is it caused by changes in prices? We can not believe the returns were misleading. Before compiled every report was carefully examined and edited and it is not likely that any glaring error could have been overlooked. Nor is it in the compilation of the data. In this work every step was verified and every precaution taken to avoid mistakes. No clue, then, is likely to be obtained from looking into the first two possible causes mentioned. But what about prices? During the period covered prices were steadily advancing. A constant change in values was taking place. That these changes were of such a nature as to cause the above relative reduction in the cost of material is not only likely but almost certain. It is easy to see how this could have occurred. In the upward tendency which was going on, a slightly stronger rise in the finished product than in the material entering into it, would alone be sufficient. It could also have occurred

through numerous other changes of this nature. But no matter just how, the market is surely responsible.

This apparent reduction in the cost of material would naturally increase the amount which could be expended for other purposes or result in larger profits. Wages increased. In spite of the increase in goods made, wages not only maintained its relative position but made a slight gain. In amount the increase in wages was not as great as the increase in product, or in the cost value of stock, but relatively, it was higher, being nearly 14 per cent., as against nearly 13 for goods made and 9 for stock. The relative raise in wages was not enough to absorb by far the decrease spoken of for stock. The raise for wages is more than covered by the lower cost of material. Where, then, is the balance arising to be applied? The facts presented do not go far enough into details to answer this question. The rotation of other expenses increased from 26.17 to 29.22 per cent. It is evident, therefore, that what was not absorbed as wages became a part of this item. Unless there was a corresponding increase in other, or miscellaneous, expenses the reduced cost in materials must have helped to swell the profits, or the share of the employer.

We have seen the respective amounts expended for material, wages and other expenses, and their relative percentage of the goods made. If material, which consists mostly of finished product in some form, and therefore constitutes no addition to the wealth, is, for their cost, deducted from the total gross value of the product, what, then, remains as the addition to the wealth, and what proportion of this remaining part went, respectively, as wages and other expenses? These questions are answered in the following exhibit:

CLASSIFICATION.	1898.		1899.	
	Amount.	Per cent.	Amount.	Per cent.
Wages.....	\$25,621,041	37.40	\$29,519,468	36.12
Other expenses.....	43,392,781	62.60	52,215,133	63.88
Goods made.....	69,313,822	100.00	81,734,601	100.00

The preceding tables and exhibits show that for 1898 and 1899, the total value of the goods made was \$158,258,741 and \$178,692,705, respectively, and that the cost of stock was \$88,944,925 and \$96,958,104, respectively. If, in each instance, the stock is deducted from the goods made we have a remainder of \$69,313,822 for the former, and \$81,734,601 for the latter year. In a certain sense these remainders constitute the value which was added to that of the stock through the manufacturing processes.

We have thus reached a point where we can compare the relative proportion of wages and other expenses of the value of the product less that of stock. As the preceding presentation shows, the value of goods made, less stock, was \$69,313,822, in 1898. Of this amount wages covered 37.40, and other expenses 62.60 per cent. In 1899 the goods made, less stock, was \$81,734,601. Of this, wages constituted 36.12 and other expenses 63.88 per cent. Under this method of comparisons the position of wages with reference to its percentage of the total value of the product before and after the stock had been taken out, seems reversed. This is entirely due to a larger divisor for the latter year.

There is one more comparison to make that may be of some interest and that one concerns the value of the output to each partner and stockholder. Figures bearing upon this are, therefore, presented:

Year.	Average when value of stock is included.	Average when value of stock is excluded.
1898.....	\$15,555	\$6,813
1899.....	15,103	6,908

We find here the average value of the goods made to each partner and stockholder,—first, when the value of stock is included, and, second, when the value of stock is excluded. When the stock is included the average value to each was \$15,555 in 1898, and \$15,103 in 1899. These figures indicate a slight decrease for 1899. When value of stock is excluded the average to each was \$6,813 in 1898 and \$6,908 in 1899. In this case the situation seems reversed. The largest average here was for the latter year.

A few of the leading facts thus presented under this head may be summarized as follows: As to the course of business in the various industries it has been shown that in 1899, as compared with 1898, 39 showed an increase in the value of goods made, and 4 a decrease; and that the net increase when all were included amounted to 12.91 per cent., or \$20,433,958. The actual change was from \$158,258,747 to \$178,692,705.

Concerning the relation of capital and product, it was seen that in obtaining a product valued at \$100 the capital used amounted to \$112.10 in 1898, and \$106.67 in 1899.

Concerning the respective relation of stock, wages and of other expenses, including profits to the value of the goods made, we saw that for 1898 and 1899 stock constituted 57.46 and 54.26 per cent., respectively; wages 16.87 and 16.52 per cent., respectively, and other expenses, including profits 26.17 and 29.22 per cent., respectively.

The relation between wages and other expenses, including profits, respectively, and the value of the goods made, less cost of stock, was: Wages, 37.40 and 36.12 per cent.; other expenses, 62.60 and 63.88 per cent., respectively, for the two years.

The average value of goods made in 1898 and 1899 to each partner and stockholder was \$15,555, when stock was included, and \$6,813 when the cost of stock was excluded in the former year; and \$15,103 when cost of stock was included and \$6,908 when stock was excluded in the latter year.

Persons employed by months, by industries.

AGRICULTURAL IMPLEMENTS.

(26 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals	Males.	Females.	Totals.
January	2,173	2	2,175	3,209	2	3,211
February	2,364	2	2,366	3,211	3	3,214
March	2,482	2	2,484	3,399	2	3,401
April	2,422	4	2,426	3,334	7	3,336
May	2,256	4	2,260	3,082	2	3,084
June	2,443	4	2,452	3,088	2	3,090
July	2,425	3	2,428	2,886	2	2,888
August	2,106	3	2,108	2,892	2	2,894
September	2,229	2	2,231	2,461	2	2,463
October	2,352	2	2,354	2,390	3	2,393
November	2,569	2	2,571	2,835	3	2,838
December	2,669	2	2,671	3,160	3	3,163

ARTISANS' TOOLS AND HARDWARE SPECIALTIES.

(9 establishments.)

January	856	.....	856	946	.....	946
February	835	.....	835	1,026	.....	1,026
March	740	.....	740	891	.....	891
April	686	.....	686	718	.....	718
May	607	.....	607	626	.....	626
June	502	.....	502	581	.....	581
July	479	.....	479	547	.....	547
August	486	.....	485	560	.....	560
September	616	.....	616	637	.....	637
October	713	.....	713	722	.....	722
November	815	.....	815	716	.....	716
December	909	.....	909	783	.....	783

BICYCLES, TRICYCLES, ETC.

(10 establishments.)

January	953	.....	953	733	.....	733
February	1,021	.....	1,021	779	.....	779
March	1,081	.....	1,081	793	.....	793
April	1,228	.....	1,228	737	.....	737
May	1,275	.....	1,275	722	.....	722
June	1,006	.....	1,006	485	.....	485
July	543	.....	543	447	.....	447
August	331	.....	331	386	.....	386
September	374	.....	374	240	.....	240
October	512	.....	513	317	.....	317
November	837	.....	837	420	.....	420
December	994	.....	994	631	.....	631

Persons employed by months, by industries—continued.

BOOTS AND SHOES.

(22 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	1,591	765	2,356	1,599	833	2,437
February	1,629	778	2,407	1,586	833	2,419
March	1,649	789	2,438	1,586	839	2,425
April	1,610	778	2,388	1,582	837	2,419
May	1,604	773	2,377	1,525	789	2,314
June	1,646	747	2,393	1,541	826	2,367
July	1,488	720	2,208	1,572	813	2,385
August	1,610	774	2,384	1,540	820	2,360
September	1,623	777	2,399	1,576	827	2,403
October	1,591	759	2,350	1,588	830	2,418
November	1,604	746	2,350	1,565	823	2,388
December	1,609	749	2,358	1,588	831	2,419

BOXES (WOODEN AND PAPER).

(27 establishments.)

January	772	388	1,160	964	423	1,387
February	800	389	1,189	979	427	1,406
March	848	412	1,260	980	436	1,416
April	866	422	1,317	1,008	441	1,444
May	874	424	1,298	1,067	454	1,511
June	991	432	1,423	982	453	1,445
July	938	428	1,366	1,072	454	1,526
August	940	427	1,367	1,031	451	1,512
September	866	448	1,314	1,110	451	1,561
October	912	445	1,357	1,067	460	1,517
November	878	433	1,311	1,068	467	1,525
December	849	437	1,286	1,068	463	1,561

BRICK, TILES AND SEWER PIPE.

(23 establishments.)

January	72	72	70	70
February	74	74	79	79
March	94	94	111	111
April	246	246	255	255
May	530	530	577	577
June	616	616	660	660
July	669	669	691	691
August	618	613	776	776
September	573	573	662	662
October	422	422	430	431
November	241	241	248	248
December	127	127	133	133

Persons employed by months, by industries—continued.

BROOMS, BRUSHES AND BASKETS.

(16 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	114	1	115	145	1	146
February	129	1	130	164	1	165
March	144	1	145	184	1	185
April	152	4	156	173	1	174
May	156	4	160	192	5	197
June	164	4	168	199	5	204
July	165	4	169	216	5	221
August	174	4	178	227	5	232
September	173	3	176	200	5	205
October	141	.....	141	172	5	177
November	131	.....	131	169	1	160
December	115	.....	115	144	1	145

BURIAL CASES, CASKETS, COFFINS, ETC.

(3 establishments.)

January	256	70	326	275	80	355
February	256	70	326	275	80	355
March	257	70	327	276	80	356
April	256	70	326	276	80	356
May	256	70	326	277	80	357
June	256	70	326	277	80	357
July	255	70	325	277	80	357
August	255	70	325	277	80	357
September	254	70	324	278	80	358
October	254	70	324	278	80	358
November	256	70	326	279	80	359
December	256	70	326	279	80	359

CEMENT, LIME, PLASTER, ETC.

(9 establishments.)

January	156	3	159	198	4	197
February	164	3	167	208	5	206
March	233	3	236	216	8	224
April	256	4	260	253	7	260
May	251	4	255	329	9	338
June	249	4	253	402	9	411
July	265	4	269	430	11	441
August	264	4	268	420	9	429
September	375	4	379	423	33	456
October	307	4	311	433	44	477
November	289	2	291	400	36	436
December	237	2	239	328	31	359

Persons employed by months, by industries—continued.

CHAIRS.

(10 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	2,729	235	2,964	3,000	255	3,255
February	2,894	273	3,167	3,064	256	3,310
March	2,988	290	3,278	2,605	216	2,821
April	2,974	294	3,268	2,705	213	2,918
May	2,990	298	3,288	2,702	200	2,902
June	2,938	291	3,229	2,636	201	2,837
July	2,907	286	3,193	2,727	201	2,928
August	3,033	271	3,304	2,779	205	2,984
September	3,081	275	3,356	2,731	209	2,940
October	3,182	282	3,464	2,994	205	3,199
November	3,138	298	3,436	3,069	215	3,284
December	2,973	264	3,237	3,024	216	3,240

CIGARS, SNUFF AND TOBACCO.

(50 establishments.)

January	643	292	935	673	300	973
February	672	294	966	680	301	981
March	664	301	965	688	316	1,004
April	674	295	969	697	203	900
May	676	320	996	752	321	1,073
June	670	324	994	708	330	1,038
July	659	302	961	694	314	998
August	667	284	951	717	304	1,021
September	650	327	977	648	307	955
October	671	286	957	730	326	1,056
November	684	286	970	726	323	1,054
December	688	286	974	721	330	1,051

CLOTHING.

(23 establishments.)

January	316	1,847	2,163	343	2,150	2,493
February	442	2,098	2,540	342	2,183	2,520
March	448	2,144	2,592	333	2,268	2,701
April	450	2,120	2,570	356	2,273	2,629
May	470	2,075	2,545	359	2,277	2,636
June	467	2,039	2,506	363	2,277	2,640
July	462	2,128	2,590	355	2,266	2,721
August	481	2,213	2,694	356	2,320	2,676
September	471	2,242	2,713	371	2,256	2,727
October	486	2,261	2,747	376	2,408	2,778
November	487	2,228	2,715	373	2,262	2,736
December	472	2,155	2,627	357	2,314	2,671

Persons employed by months, by industries—continued.

CONFECTIONERIES, CRACKERS, ETC.

(13 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	390	377	767	372	504	876
February	372	403	775	358	549	907
March	350	424	804	350	606	956
April	389	477	866	383	636	1,024
May	404	502	906	396	690	1,086
June	399	507	906	389	676	1,065
July	393	519	912	400	636	1,036
August	407	539	946	438	705	1,143
September	431	563	994	451	744	1,195
October	444	637	1,081	466	781	1,247
November	453	681	1,134	502	851	1,353
December	456	674	1,130	462	824	1,286

COOKING AND HEATING APPARATUS.

(5 establishments.)

January	828	3	831	820	3	823
February	878	3	881	923	3	926
March	925	3	928	976	3	979
April	968	3	961	1,015	3	1,018
May	986	3	989	1,052	3	1,055
June	1,014	3	1,017	1,005	3	1,008
July	1,070	3	1,073	1,128	3	1,131
August	1,136	3	1,139	1,143	3	1,146
September	1,141	3	1,144	1,163	3	1,166
October	1,131	3	1,134	1,146	3	1,149
November	1,066	3	1,069	1,113	3	1,116
December	993	3	996	1,002	3	1,005

COOPERAGE.

(15 establishments.)

January	535	.....	535	425	1	426
February	538	.....	538	417	1	418
March	546	.....	546	435	1	436
April	553	.....	553	474	1	475
May	566	.....	566	429	1	430
June	570	.....	570	468	1	469
July	552	.....	552	479	1	480
August	558	.....	558	485	.....	485
September	543	.....	543	483	.....	484
October	606	.....	606	536	1	537
November	583	.....	583	532	1	533
December	621	.....	621	511	1	512

Persons employed by months, by industries—continued.

COTTON AND LINEN GOODS.

(6 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	198	282	480	186	278	464
February	196	281	477	189	279	468
March	201	282	483	192	280	472
April	201	275	476	190	280	470
May	203	280	483	191	277	468
June	188	283	481	191	278	469
July	196	284	480	188	276	464
August	201	279	480	188	278	466
September	199	281	480	186	280	466
October	196	285	481	188	283	471
November	195	283	478	189	285	474
December	196	287	483	193	284	477

ELECTRICAL AND GAS APPARATUS AND SUPPLIES.

(17 establishments.)

January	933	52	985	936	57	993
February	967	52	1,009	953	59	1,017
March	970	57	1,027	973	65	1,038
April	988	63	1,051	980	63	1,043
May	1,015	66	1,081	1,006	58	1,064
June	1,006	60	1,066	1,011	65	1,076
July	995	62	1,057	1,038	65	1,103
August	1,032	60	1,092	1,335	69	1,404
September	1,036	62	1,098	1,031	67	1,098
October	1,026	58	1,084	1,047	69	1,116
November	1,042	62	1,104	1,036	67	1,103
December	1,033	61	1,094	1,071	65	1,136

FLOUR AND FEED.

(65 establishments.)

January	984	9	1,003	646	11	657
February	1,012	9	1,021	647	8	655
March	1,019	4	1,023	648	8	656
April	975	4	979	638	8	646
May	1,055	4	1,059	910	6	916
June	984	4	988	830	7	837
July	995	4	999	943	8	951
August	1,004	4	1,008	916	12	928
September	1,027	4	1,031	920	19	939
October	1,064	9	1,073	813	28	841
November	1,060	9	1,069	817	20	837
December	969	9	978	638	9	707

Persons employed by months, by industries—continued.

FURNITURE.

(38 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	2,221	37	2,258	2,476	62	2,538
February	2,402	30	2,432	2,598	55	2,653
March	2,541	32	2,573	2,652	51	2,703
April	2,622	34	2,656	2,824	57	2,881
May	2,618	28	2,646	2,728	45	2,773
June	2,379	30	2,409	2,592	46	2,638
July	2,198	35	2,233	2,647	45	2,692
August	2,278	35	2,313	2,948	46	2,994
September	2,359	35	2,395	2,709	51	2,760
October	2,446	34	2,480	2,705	65	2,770
November	2,425	47	2,472	2,829	62	2,891
December	2,424	50	2,474	2,651	57	2,708

FURS, GLOVES AND MITTENS.

(9 establishments.)

January	56	90	146	65	114	179
February	58	96	154	68	111	179
March	61	99	160	73	123	196
April	63	106	169	74	135	209
May	67	120	187	76	127	203
June	65	124	189	76	137	213
July	65	129	194	77	139	216
August	66	129	195	82	159	241
September	70	137	207	74	144	218
October	62	143	211	76	126	212
November	63	139	207	72	127	199
December	66	128	194	67	108	175

IRON GOODS (MALLEABLE).

(24 establishments.)

January	3,683	7	3,695	4,635	6	4,641
February	3,677	7	3,684	4,754	9	4,763
March	3,731	7	3,738	4,771	9	4,780
April	3,833	10	3,843	4,951	9	4,960
May	4,072	11	4,083	4,960	9	4,969
June	3,805	13	3,818	4,939	9	4,948
July	3,973	12	3,985	4,969	9	4,978
August	4,211	12	4,223	5,006	9	5,015
September	4,237	12	4,249	5,126	7	5,133
October	4,396	10	4,396	4,965	6	4,971
November	4,363	9	4,372	5,208	8	5,216
December	4,315	11	4,326	5,856	8	5,864

Persons employed by months, by industries—continued.

KNIT GOODS.

(16 establishments.)

MONTH.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Female.	Totals.
January	432	1,531	1,963	373	1,799	2,172
February	432	1,484	1,916	369	1,828	2,197
March	434	1,498	1,932	384	1,904	2,288
April	448	1,577	2,025	396	1,941	2,337
May	518	1,606	2,123	393	1,999	2,392
June	463	1,606	2,068	414	2,004	2,418
July	462	1,592	2,054	432	2,064	2,496
August	468	1,599	2,067	426	2,088	2,514
September	457	1,602	2,059	412	2,115	2,527
October	454	1,595	2,049	377	2,180	2,557
November	446	1,574	2,020	431	2,089	2,520
December	494	1,556	2,050	417	2,037	2,454

LAGER BEER.

(57 establishments.)

January	2,453	306	2,758	2,529	409	2,938
February	2,423	311	2,734	2,536	409	2,945
March	2,437	348	2,785	2,543	417	2,960
April	2,506	409	2,914	2,593	453	3,046
May	2,520	304	2,824	2,603	452	3,055
June	2,545	483	3,028	2,628	442	3,070
July	2,556	436	2,992	2,640	455	3,095
August	2,556	442	2,998	2,644	459	3,103
September	2,532	437	2,969	2,647	459	3,106
October	2,575	468	3,043	2,691	528	3,219
November	2,523	414	2,937	2,630	490	3,120
December	2,468	389	2,857	2,582	470	3,052

LEATHER.

(25 establishments.)

January	3,710	311	4,021	3,881	327	4,208
February	3,736	311	4,047	3,961	328	4,289
March	3,764	311	4,075	3,986	328	4,314
April	3,761	311	4,072	3,986	328	4,314
May	3,336	311	3,647	3,929	328	4,257
June	3,656	311	3,967	4,048	328	4,376
July	3,727	311	4,038	4,249	328	4,577
August	3,638	311	4,249	4,259	328	4,617
September	3,897	311	4,208	4,345	328	4,673
October	3,844	311	4,155	4,247	328	4,575
November	3,796	311	4,067	4,224	328	4,552
December	3,807	311	4,118	4,291	328	4,619

Persons employed by months, by industries—continued.

LUMBER, LATH AND SHINGLES.

(124 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	5,365	22	5,387	9,234	25	9,259
February	5,432	22	5,454	9,291	24	9,315
March	6,982	27	7,009	9,688	23	9,711
April	11,220	56	11,276	12,319	25	12,344
May	14,320	97	14,417	15,679	69	15,748
June	14,046	101	14,147	18,078	67	18,145
July	13,717	92	13,809	16,087	67	16,154
August	12,562	73	12,635	16,826	62	15,888
September	12,501	67	12,568	15,270	61	15,331
October	11,606	37	11,643	14,942	43	14,985
November	9,006	33	9,039	13,667	24	13,691
December	5,918	20	5,938	11,410	23	11,433

MALT.

(16 establishments.)

January	530	1	531	593	4	597
February	532	1	533	533	4	537
March	536	1	536	470	4	474
April	532	1	533	435	4	439
May	507	1	508	376	4	380
June	458	1	459	345	4	349
July	424	1	425	280	4	284
August	415	1	416	306	4	310
September	489	1	490	373	4	377
October	534	2	536	511	3	514
November	535	2	537	506	3	508
December	535	2	537	503	3	506

MACHINES AND MACHINERY.

(84 establishments.)

January	4,396	11	4,397	5,276	19	5,295
February	4,630	11	4,641	5,476	19	5,495
March	4,800	10	4,810	5,692	20	5,712
April	4,761	10	4,771	5,091	19	5,110
May	4,921	10	4,931	6,026	18	6,044
June	4,913	10	4,923	6,243	18	6,266
July	4,831	10	4,841	6,411	18	6,428
August	5,140	17	5,157	6,552	18	6,570
September	5,204	17	5,221	6,438	25	6,463
October	5,115	18	5,133	6,501	26	6,527
November	5,089	19	5,118	6,506	27	6,533
December	5,142	19	5,161	6,374	27	6,401

Persons employed by months, by industries—continued.

OFFICE AND SALOON FIXTURES, ETC.

(7 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	405	.....	405	483	.....	483
February	397	.....	397	485	.....	485
March	407	.....	407	520	.....	520
April	442	.....	442	528	.....	528
May	437	.....	437	529	.....	529
June	444	.....	444	532	.....	532
July	474	.....	474	543	.....	543
August	490	.....	490	545	.....	545
September	486	.....	486	551	.....	551
October	476	.....	476	551	.....	551
November	496	.....	496	528	.....	528
December	483	.....	483	466	.....	466

PAINTS, OILS AND CRUDE CHEMICALS.

(5 establishments.)

January	89	6	95	109	10	119
February	89	6	95	84	10	94
March	89	6	95	110	10	120
April	70	6	76	110	10	120
May	70	6	76	130	10	140
June	70	6	76	129	10	139
July	70	6	76	130	10	140
August	70	6	76	130	10	140
September	89	6	95	129	10	139
October	89	6	95	130	10	140
November	89	6	95	130	10	140
December	89	6	95	130	10	140

PAPER AND PULP.

(31 establishments.)

January	2,597	565	3,162	2,574	625	3,199
February	2,552	583	3,135	2,590	632	3,212
March	2,602	611	3,213	2,594	619	3,213
April	2,631	613	3,244	2,667	676	3,293
May	2,700	668	3,288	2,653	646	3,299
June	2,647	590	3,237	2,685	705	3,390
July	2,601	532	3,133	2,668	699	3,367
August	2,390	533	2,923	2,684	703	3,387
September	2,369	535	2,904	2,705	691	3,396
October	2,481	584	3,065	2,719	690	3,409
November	2,570	596	3,166	2,825	699	3,524
December	2,558	602	3,160	2,789	735	3,524

Persons employed by months, by industries—continued.

SADDLERY, HARNESS, ETC.

(8 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	162	54	216	146	61	207
February	162	63	225	148	54	202
March	166	67	233	153	70	223
April	171	50	221	156	77	233
May	173	40	213	154	87	241
June	179	37	216	161	73	234
July	175	36	211	164	68	217
August	166	15	181	154	48	202
September	175	11	186	148	21	169
October	116	17	133	161	42	203
November	114	31	145	175	45	220
December	122	37	159	182	79	261

SASH, DOORS, BLINDS, ETC.

(68 establishments.)

January	2,452	32	2,484	2,635	55	2,690
February	2,613	35	2,648	2,482	54	2,536
March	2,794	35	2,829	2,869	70	2,939
April	2,975	39	3,014	3,135	63	3,198
May	2,822	37	2,859	3,160	66	3,225
June	2,229	11	2,240	3,310	65	3,375
July	2,108	2	2,110	3,325	50	3,375
August	2,673	16	2,689	3,283	49	3,332
September	2,747	53	2,780	3,157	41	3,198
October	2,967	28	3,025	3,168	48	3,216
November	2,798	25	2,823	3,192	53	3,245
December	2,538	22	2,560	2,986	63	2,940

SHEET METAL GOODS.

(23 establishments.)

January	1,494	371	1,865	1,549	318	1,867
February	1,463	347	1,810	1,565	333	1,898
March	1,592	347	1,939	1,646	330	1,976
April	1,707	379	2,086	1,671	353	2,024
May	1,721	389	2,110	1,699	363	2,062
June	1,691	374	2,065	1,698	375	2,073
July	1,743	385	2,128	1,731	375	2,106
August	1,753	362	2,115	1,803	382	2,185
September	1,819	381	2,200	1,841	389	2,230
October	1,814	375	2,189	1,874	398	2,272
November	1,705	372	2,077	1,762	397	2,159
December	1,536	352	1,888	1,693	379	2,072

Persons employed by months, by industries—continued.

SHIP AND BOAT BUILDING.

(6 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	1,002	.....	1,002	814	1	815
February	972	.....	972	879	.....	879
March	834	.....	834	1,022	2	1,030
April	1,258	1	1,259	925	2	927
May	1,063	2	1,065	1,160	2	1,162
June	1,108	1	1,109	908	2	910
July	955	1	956	794	4	798
August	782	2	784	642	2	644
September	577	1	578	798	.....	798
October	643	.....	643	694	.....	694
November	759	.....	759	660	.....	660
December	800	.....	800	758	1	759

SOAP, LYE, POTASH, ETC.

(8 establishments.)

January	108	69	177	112	82	195
February	108	68	176	112	81	192
March	107	67	174	111	81	192
April	109	69	178	112	75	187
May	109	69	177	112	74	186
June	108	65	173	112	83	195
July	106	68	174	108	79	187
August	107	71	178	108	78	186
September	108	69	177	111	78	189
October	109	70	179	112	81	193
November	107	69	176	111	78	189
December	108	64	172	113	78	191

STAVES AND HEADING.

(15 establishments.)

January	392	.....	392	390	.....	390
February	399	.....	399	401	.....	401
March	394	.....	394	461	.....	461
April	374	.....	374	453	.....	453
May	400	.....	400	459	.....	459
June	370	.....	370	416	.....	416
July	327	.....	327	331	.....	331
August	311	.....	311	264	.....	264
September	303	.....	303	246	.....	246
October	306	.....	306	228	.....	228
November	318	.....	318	260	.....	260
December	259	.....	259	323	.....	323

Persons employed by months, by industries—continued.

STONE (GRANITE, MARBLE, ETC.).

(9 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	112	.....	112	81	.....	81
February	109	.....	109	86	.....	86
March	122	.....	122	99	.....	99
April	136	.....	186	124	.....	124
May	144	.....	144	168	.....	168
June	120	.....	120	165	.....	165
July	121	.....	121	167	.....	167
August	123	.....	123	169	.....	169
September	146	.....	146	219	.....	219
October	136	.....	136	210	.....	210
November	116	.....	116	179	.....	179
December	70	.....	70	154	.....	154

TOYS AND GAMES.

(5 establishments.)

January	210	17	227	225	17	242
February	220	24	264	262	22	274
March	263	24	287	270	22	292
April	266	22	288	285	19	304
May	264	15	279	267	19	286
June	267	21	288	268	18	286
July	283	30	313	320	28	348
August	321	30	351	343	33	376
September	346	31	377	349	33	382
October	366	39	395	363	42	395
November	379	45	424	361	39	400
December	332	31	363	332	28	360

TRUNKS, VALISES, ETC.

(6 establishments.)

January	231	51	282	237	96	323
February	229	51	280	244	85	329
March	227	54	291	247	89	336
April	244	57	301	252	95	347
May	214	54	268	251	96	347
June	208	46	249	254	100	354
July	208	48	256	258	94	352
August	233	57	296	252	96	348
September	256	59	315	264	105	369
October	263	59	312	254	103	357
November	223	70	293	243	94	337
December	225	76	301	245	96	341

Persons employed by months, by industries—continued.

VENEER.

(7 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	315	.....	315	336	.....	336
February	321	.....	321	359	.....	359
March	347	.....	347	410	.....	410
April	350	.....	350	455	.....	455
May	411	.....	411	449	.....	449
June	428	.....	428	473	.....	473
July	377	.....	377	461	.....	461
August	351	.....	351	445	.....	445
September	340	.....	340	436	.....	436
October	337	.....	337	417	.....	417
November	265	.....	265	323	.....	323
December	266	.....	266	322	.....	322

WAGONS, CARRIAGES AND SLEIGHS.

(39 establishments.)

January	2,099	40	2,139	2,495	45	2,540
February	2,292	43	2,335	2,525	45	2,570
March	2,386	43	2,429	2,627	45	2,673
April	2,433	44	2,477	2,676	45	2,721
May	2,564	45	2,609	2,713	47	2,760
June	2,584	44	2,628	2,654	46	2,699
July	2,536	43	2,578	2,638	44	2,682
August	2,538	36	2,574	2,546	41	2,587
September	2,427	36	2,463	2,543	39	2,582
October	2,360	33	2,402	2,529	43	2,572
November	2,469	38	2,507	2,461	36	2,497
December	2,331	41	2,372	2,622	41	2,663

WOODENWARE.

(8 establishments.)

January	1,238	.....	1,238	1,402	.....	1,402
February	1,280	.....	1,280	1,410	.....	1,410
March	1,366	.....	1,366	1,489	.....	1,489
April	1,404	.....	1,404	1,454	.....	1,454
May	1,404	.....	1,404	1,475	.....	1,475
June	1,451	.....	1,451	1,489	.....	1,489
July	1,477	.....	1,477	1,472	.....	1,472
August	1,473	.....	1,473	1,506	.....	1,506
September	1,452	.....	1,452	1,477	.....	1,477
October	1,452	.....	1,452	1,513	.....	1,513
November	1,467	.....	1,467	1,493	.....	1,493
December	1,468	.....	1,468	1,502	.....	1,502

Persons employed by months, by industries—continued.

WOOLEN AND WORSTED GOODS.

(16 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	388	509	897	407	454	861
February	397	534	931	402	458	860
March	409	552	961	408	471	879
April	420	593	1,013	417	481	896
May	396	569	965	416	494	912
June	379	531	910	363	438	801
July	411	560	971	423	508	931
August	381	511	892	421	517	938
September	396	522	918	428	532	960
October	387	521	908	453	540	993
November	374	485	859	438	526	964
December	368	508	871	420	512	932

The foregoing table relates to the number of persons employed, each month, in 1898 and 1899. Its real purpose is to set forth in the best way that could be thought of, for each industry, the average number of male, female and total persons employed each month throughout the two years. This object was attained. This table differs in many ways from those preceding it. The first feature, in this connection, that is likely to attract attention is its length. As planned, the data for four industries only could be presented on each page. With forty-three industries included this means that the table covers eleven pages. In less space than this intelligent results could hardly have been brought out. A little study of the nature of the data will make this plain. This table also differs from the others in this, that it contains no comparisons as between the two years. Such comparisons have been made, but have been presented separately, as will be seen later on. The table is comprehensive and will furnish facts for many interesting observations.

As said already, the above table shows, by industries, the number of persons employed each month. Data of this kind is of considerable importance. The figures for each industry show, first of all, the monthly range of employment. This alone is important enough for the space devoted to it. The time em-

ployed is as essential as the rate of wages paid. Generally speaking, few workers are paid for their labor at rates that permit a great deal of leisure, if their families are to be maintained and provided with reasonable comforts. Workers are generally paid by the time, or piece. When not employed, they earn nothing. Lack of employment means discontent, if not want. Constant employment usually implies the contrary. Fluctuations in the number employed means partial employment. Little variation in this respect is likely to mean full employment. The importance of steady employment can hardly be overestimated. But the figures are also full of meaning to the employers. Steadiness of operation and fair business usually go hand in hand. When one month shows full employment and another no, or only partial, employment, the situation is not likely to be normal. Business men are no more likely to profit by it than the workers. It is true that the two classes may not be affected to the same extent or precisely in the same way, but in some way the effect is felt by both. Considering thus what the table contains, further analysis of these contents is fully warranted.

The first step towards a more complete analysis is found in the consideration of the total persons employed for "all industries," which are presented in the following exhibit.

Total persons employed by months, all industries.

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males	Females.	Totals.
January	56,614	8,355	58,999	58,593	9,427	68,020
February	52,061	8,683	60,744	59,529	9,559	69,088
March	55,069	8,931	64,000	60,976	9,917	70,893
April	60,647	9,200	69,847	63,881	9,885	73,766
May	63,944	9,128	73,072	69,001	10,126	79,127
June	62,720	9,176	71,896	68,811	10,182	78,993
July	61,380	9,146	70,526	69,395	10,319	79,714
August	61,096	9,209	70,305	69,889	10,407	80,296
September	61,454	9,364	70,818	68,338	10,507	78,845
October	61,352	9,451	70,803	68,073	10,833	78,906
November	58,849	9,456	68,305	67,250	10,678	77,928
December	55,238	9,219	64,607	64,771	10,538	75,309

The preceding exhibit show, for all industries, the number of persons employed each month in 1898 and 1899.

In studying this exhibit many interesting facts are revealed. The first thing we may notice is the variation from month to

month in the number of persons employed. This variation holds good for both males and females and appears, of course, in the total number of both. As the number for each year are given separately as well as the males and females, the exhibit furnishes material for many interesting comparisons.

In the exhibit which is next in order we find the percentage relation which the number of persons employed each month bear to the number which were employed during the month when the greatest number, for any month, were employed. For the highest month, with respect to employment, the per cent is represented by 100. The other months are represented by the percentage-relation their respective number bear to that of the highest month.

Monthly range.

MONTHS.	1898.			1899.		
	Male per cent.	Female per cent.	Total per cent.	Male per cent.	Female per cent.	Total per cent.
January	79.20	85.35	80.74	83.83	87.02	84.71
February	81.41	91.82	83.13	86.17	88.23	86.04
March	86.15	94.44	87.58	87.24	91.54	88.23
April	94.84	97.29	96.58	91.40	91.06	91.84
May	100.00	96.53	100.00	98.73	93.47	96.54
June	98.08	97.03	98.39	95.45	93.99	95.37
July	96.02	96.72	96.51	99.29	96.25	99.22
August	96.54	97.38	96.21	100.00	96.06	100.00
September	96.15	99.03	96.61	97.77	96.99	96.19
October	95.94	99.94	96.89	98.83	100.00	98.26
November	91.71	100.00	93.47	96.22	98.56	96.92
December	86.65	97.49	88.41	92.67	97.27	93.78

Here is an exhibit for which much is claimed. Its aim is to show more expressively than was possible in the one preceding it the monthly range of employment for all industries. The last exhibit considered gave the total number employed each month. In a way therefore that exhibit necessarily calls attention to the variations in number, as between the different months, as well as the month with the greatest number. The preceding exhibit expresses the percentage relation of the number for each month, to the number for the highest month. The two exhibits therefore really show the same thing in two different ways. In one, the description is by number, in the other by percentages. From both the range of unemployment or, employment can be ob-

tained, though the latter would seem more definite, and, too, express the relations as between the months more fully.

For the two years 1898 and 1899, the range of males, females, and the total of both is given separately. Turning to the description for 1898, and considering first the totals for that year, we find that May is the month having the greatest number of persons for the year, and that, as a consequence, all the other months show a lower percentage than May. The range, however, varies. For January, the first month, the percentage is 80.74, or the lowest during 1898. This means that during January 19.26 per cent. of those who had employment in May were idle. In February the percentage had risen to 83.13, in March to 87.58, and in April to 95.58. With this constant increase in the number employed there was a corresponding decrease in the unemployed. May, the highest month, shows 100 per cent. From this, which is the top point, the tendency is down. In June, the percentage was 98.39, in July 96.51, in August 96.21, in September 96.61, in October 96.89. For four months in succession the change was thus very small. Coming to November, however, we notice a further drop. Here the point is at 93.47, and for the last month of the year it is at 88.41. The range in December was thus 11.59 per cent. On the whole, the range of unemployment varied from 19.26 per cent. to full employment.

Turning from the totals for both sexes to the relations for each, we find a somewhat similar condition. Especially are the relations for male employees closely following those for both sexes. Thus we again find for the month of May the highest in point of employment, and for January the lowest. The percentage for the first month of the year was 79.20. The range of unemployment for this month being thus 20.80 per cent., or, a trifle greater for males alone than for both sexes. For the other months the variations differ, but as said, follow the course of the totals already described.

The month during which the greatest number of females were employed was November. The position for this month is therefore indicated by 100. The lowest number was for January. The range between the two months was 11.65 per cent.

Throughout the whole year the range of unemployment is much more narrow for the females than for the males, and for both sexes. As the proportion of female employes is comparatively small it is only natural it should have less effect upon the totals, than that of the males.

Having considered the range for 1898 we will turn to that for 1899. Broadly speaking there is much similarity between the relations in this respect for the two years. For the latter, the range, as a whole, is narrower. The highest number also occurs for a different month than in the former year, or in August. The number employed in January reached 84.71 per cent., making the range of unemployment for this month 15.39 per cent. For January the relation gradually grew closer, and in April had reached a percentage of 91.84. The next month it was 98.54 and then remained close to this figure until in August when the highest point was reached. For the four last months there was a gradual increase in the range of unemployment, and for December it was 6.22 per cent.

For the males also the greatest number, in 1899, is for August, and the lowest for January. The range of unemployment for the latter month was 16.27 or the difference between 83.83 and 100 per cent. From January the range is somewhat irregular but follows the course outlined for the total number. In fact the relation between the figures for the male and the total persons employed are, as said already, so nearly alike that a general description for one would, in a measure, answer for both.

The females, for 1899, show in no case either as wide or as narrow a range as the males. The highest number are employed in the fall. October has a greater number by one and one-half per cent. than any other month. The widest range is that for January which shows 87.02 per cent. From January to October there was a monthly decrease in the range varying from about one to about three per cent. For November and December the range is slightly greater than for October.

The exhibit which follows shows, in number and per cent. the increase in 1899 as compared with 1898, in the total persons employed by months.

MONTHS.	INCREASE 1899, AS COMPARED WITH 1898.	
	Number.	Amount.
January	9,021	15.25
February	8,344	13.73
March	6,883	10.77
April	3,899	5.57
May	6,065	8.28
June	7,097	9.87
July	9,188	13.04
August	9,991	14.21
September	8,027	11.33
October	8,103	11.44
November	9,623	14.06
December	10,702	16.56

The above exhibit deals with the increase in the number of persons employed each month, in 1899 over 1898. The monthly increase varies from 3,899, or 5.57 per cent. in April to 10,702, or 16.56 per cent. in December. It is interesting to note the course of this increase. Beginning with January we find there that it amounts to 15.28 per cent. For February, March and April the percentage stood 13.73, 10.77 and 5.57 respectively, a gradual decrease. At this point there is a turn and an increase sets in which continues until August. The respective percentage for May to August inclusive is 8.28, 9.87, 13.04, 14.21. For September and October the percentage is 11.33 and 11.44. November shows 14.08 and December 16.56 per cent.

Having seen the total persons employed each month, the monthly range of employment, and the monthly increase in the number employed for 1899, attention will be called to the respective proportion of males and females. To this the following exhibit is devoted:

PER CENT. MALES AND FEMALES.

MONTHS.	1898.			1899.		
	Male per cent.	Female per cent.	Total per cent.	Male per cent.	Female per cent.	Total per cent.
January	85.84	14.16	100.00	86.14	13.86	100.00
February	85.71	14.29	100.00	86.16	13.84	100.00
March	86.04	13.96	100.00	86.01	13.99	100.00
April	86.83	13.17	100.00	86.62	13.38	100.00
May	87.51	12.49	100.00	87.21	12.79	100.00
June	87.23	12.77	100.00	87.11	12.89	100.00
July	87.03	12.97	100.00	87.05	12.95	100.00
August	86.91	13.09	100.00	87.06	12.94	100.00
September	86.75	13.25	100.00	86.67	13.33	100.00
October	86.65	13.35	100.00	86.27	13.73	100.00
November	86.15	13.85	100.00	86.29	13.71	100.00
December	86.97	13.03	100.00	86.00	14.00	100.00

This exhibit shows, for 1898 and 1899, the respective per cent. of males and females of the total persons employed each month.

Taking up the year 1898 first we find that for January 85.84 per cent. of the total persons employed were males and 14.16 per cent. females. This relation is fairly maintained throughout the year, the greatest differences being those for May when the males stood at 87.51 and the females at 12.49 per cent. The variation each month, while apparent is small and amounts only to a little over one and one-half of one per cent.

For 1899 about the same conditions are found. January shows 86.14 for the males and 13.86 for females. The variation from these figures hardly amounts to one and one-half per cent. during either of the other months.

From the facts presented under this head the following results were obtained.

In 1898 the greatest number, or 73,072, were employed in May, and the smallest number, 58,999 in January.

In 1899 the greatest number of persons, 80,296 were employed in August, and the smallest number, 68,020 in January.

The monthly range of unemployment in 1898 and 1899, or, in other words, the difference between the month in which the greatest number were employed and each one of the other months stood as follows:

For January the difference, or range of unemployment was 19.26 per cent. in 1898 and 15.29 per cent. in 1899. February 16.87 and 13.96 per cent. respectively. March 12.42 and 11.72

per cent. respectively. April 4.42 and 8.16 per cent. respectively. May none and 1.46 per cent. respectively. June 1.61 and 1.63 per cent. respectively. July 3.49 and .78 per cent. respectively. August 3.75 and none per cent. respectively. September 3.39 and 1.81 per cent. respectively. October 3.11 and 1.74 per cent. respectively. November 6.53 and 3.08 per cent. respectively. December 11.59 and 6.22 per cent. respectively.

On the whole these relations indicate a more narrow range in 1899 than in 1898, though the difference is not great. In 1898 the range was from 19.26 to nothing; in 1899 from 11.72 per cent. to nothing.

The monthly increase in the number of persons employed in 1899 as compared with 1898 ranged from 16.56 per cent. to 5.57 per cent.

The relation of female to male persons employed each month ranged from 14.29 per cent. to 12.49 in 1898; and from 14.00 per cent. to 12.79 per cent. in 1899, a very narrow range in both cases.

Average number of persons employed in 1898 and 1899, by industries.

INDUSTRIES.	No. of establishments.	1898.			1899.		
		AVERAGE NUMBER OF PERSONS EMPLOYED.			AVERAGE NUMBER OF PERSONS EMPLOYED.		
		Males.	Females.	Totals.	Males.	Females.	Totals.
Agricultural implements	26	2,391	3	2,394	2,992	2	2,994
Artisans' tools and hardware specialties	9	687	.....	687	729	.....	729
Bicycles, tricycles, etc.	10	846	.....	846	558	.....	558
Boots and shoes	22	1,605	763	2,368	1,573	826	2,399
Boxes (wooden and paper)....	27	890	424	1,304	1,038	448	1,486
Brick, tile and sewer pipe....	23	356	.....	356	391	.....	391
Brooms, brushes and baskets.	16	146	3	149	181	3	184
Burial cases, caskets, etc.	3	255	70	325	260	80	340
Cement, lime, plaster, etc.	9	254	3	257	336	17	353
Chairs	10	2,990	280	3,270	2,335	216	2,551
Cigars, snuff and tobacco	50	668	300	968	702	307	1,009
Clothing	23	464	2,129	2,593	356	2,305	2,661
Confectioneries, crackers, etc.	12	410	525	935	420	684	1,104
Cooking and heating apparatus	5	1,013	3	1,016	1,040	3	1,043
Copperage	15	567	.....	567	473	.....	473
Cotton and linen goods.	6	198	232	430	189	290	479
Electrical and gas apparatus..	17	1,003	60	1,063	1,066	64	1,099
Flour and feed	65	1,013	6	1,019	785	12	797
Furniture	38	2,406	35	2,441	2,697	53	2,750
Furs, gloves and mittens.	9	64	120	184	73	130	203
Iron goods (malleable)	24	4,016	10	4,026	4,970	8	4,978
Knit goods	16	467	1,568	2,035	402	2,004	2,406
Lager beer	57	2,508	386	2,903	2,605	454	3,059
Leather	25	3,747	311	4,058	4,120	328	4,448
Lumber, lath and shingles.	124	10,223	54	10,277	13,289	43	13,332
Malt	16	502	1	503	436	4	440
Machines and machinery	84	4,912	13	4,925	6,049	21	6,070
Office and saloon fixtures	7	453	.....	453	522	.....	522
Paints, oils and crude chemicals	5	81	6	87	121	10	131
Paper and pulp	31	2,558	577	3,135	2,678	673	3,351
Saddlery, harness, etc.	8	157	38	195	157	60	217
Sash, doors, blinds, etc.	58	2,671	26	2,697	3,060	56	3,106
Sheet metal goods	23	1,673	371	2,044	1,713	366	2,079
Ship and boat building	6	896	1	897	838	2	840
Soap, lye and potash, etc.	8	106	68	176	111	79	190
Staves and heading	15	337	.....	337	353	.....	353
Stone (marble, granite, etc.)..	9	121	.....	121	151	.....	151
Toys and games	5	293	27	320	302	27	329
Trunks, valises, etc.	6	230	57	287	250	95	345
Veneer	7	342	.....	342	407	.....	407
Wagons, carriages and sleighs	39	2,419	40	2,459	2,596	43	2,629
Woodenware	3	1,408	.....	1,408	1,479	.....	1,478
Woolen and worsted goods.	16	392	532	924	416	494	910
All industries	992	58,412	9,102	67,514	65,662	10,197	75,859

*Increase and decrease in the average number of persons employed
in 1899 as compared with 1893, by industries.*

INDUSTRIES.	Number of establishments.	Increase (+) or decrease (—) in number of male and female persons employed in 1899, as compared with 1893.		Increase (+) or decrease (—) in total average persons employed in 1899 as compared with 1893.	
		Males.	Females.	Totals.	Per cent. females.
Agricultural implements.....	26	+ 601	— 1	+ 600	+ 75.00
Artisans's tools and hardware specialties.....	9	+ 42	.....	+ 42	+ 6.11
Bicycles, tricycles, etc.....	10	— 288	.....	— 288	— 34.16
Boots and shoes.....	22	+ 32	+ 63	+ 95	+ 1.3
Boxes (wooden and paper).....	27	+ 158	+ 24	+ 182	+ 13.93
Brick, tile and sewer pipe.....	23	+ 35	.....	+ 35	+ 9.83
Brooms, brushes and baskets.....	16	+ 35	.....	+ 35	+ 23.49
Burial cases, caskets, coffins, etc.....	3	+ 5	+ 10	+ 15	+ 4.62
Cement, lime, plaster, etc.....	9	+ 82	+ 14	+ 96	+ 37.35
Chairs.....	10	+ 155	+ 61	+ 219	+ 6.09
Cigars, snuff and tobacco.....	50	+ 34	+ 7	+ 41	+ 4.23
Clothing.....	23	+ 98	+ 176	+ 274	+ 3.02
Confectioneries, crackers, etc.....	12	+ 10	+ 159	+ 169	+ 18.07
Cooking and heating apparatus.....	5	+ 27	.....	+ 27	+ 2.65
Cooperage.....	15	+ 94	.....	+ 94	+ 16.57
Cotton and linen goods.....	6	— 9	— 2	— 11	— 2.29
Electrical and gas apparatus and supplies.....	17	+ 32	+ 4	+ 36	+ 3.38
Flour and feed.....	65	+ 228	+ 6	+ 234	+ 21.78
Furniture.....	38	+ 239	+ 18	+ 257	+ 12.52
Furs, gloves and mittens.....	9	+ 9	+ 10	+ 19	+ 10.32
Iron goods (malleable).....	24	+ 1,288	— 3	+ 1,285	+ 34.79
Knit goods.....	16	— 55	+ 435	+ 380	+ 18.75
Lager beer.....	57	+ 97	+ 59	+ 156	+ 5.37
Leather.....	25	+ 373	+ 17	+ 390	+ 9.55
Lumber, lath and shingles.....	124	+ 3,066	+ 11	+ 3,077	+ 29.72
Malt.....	16	+ 66	+ 3	+ 69	+ 12.52
Machines and machinery.....	84	+ 1,187	+ 8	+ 1,195	+ 23.24
Office and saloon fixtures.....	7	+ 69	.....	+ 69	+ 15.23
Paints, oils and crude chemicals.....	5	+ 40	+ 4	+ 44	+ 50.57
Paper and pulp.....	31	+ 120	+ 96	+ 216	+ 6.88
Saddlery, harness, etc.....	8	.....	+ 22	+ 22	+ 11.28
Sash, doors, blinds, etc.....	58	+ 379	+ 30	+ 409	+ 25.16
Sheet metal goods.....	23	+ 40	— 5	+ 35	+ 1.71
Ship and boat building.....	6	+ 58	+ 1	+ 59	+ 6.73
Soap, lye, potash, etc.....	8	+ 3	+ 11	+ 14	+ 7.96
Staves and heading.....	15	+ 16	.....	+ 16	+ 4.74
Stone (marble, granite etc.).....	9	+ 30	.....	+ 30	+ 24.79
Toys and games.....	5	+ 9	.....	+ 9	+ 3.07
Trunks and valises, etc.....	6	+ 20	+ 38	+ 58	+ 20.20
Veneer.....	7	+ 65	.....	+ 65	+ 19.00
Wagons, carriages and sleighs.....	39	+ 167	+ 3	+ 170	+ 6.91
Woodenware.....	8	+ 65	.....	+ 65	+ 4.61
Woolen and worsted goods.....	18	+ 24	— 38	— 14	— 1.51
All industries.....	992	+ 7,350	+ 1,085	+ 8,435	+ 12.36

MANUFACTURERS' RETURNS, 1898-1899.

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Smallest number of persons employed in 1898 and 1899, classified as to sex, by industries.

INDUSTRIES.	Number of establishments.	1898.			1899.		
		SMALLEST NUMBER OF PERSONS EMPLOYED.			SMALLEST NUMBER OF PERSONS EMPLOYED.		
		Males.	Females.	Totals.	Males.	Females.	Totals.
Agricultural implements	26	2,105	2	2,107	2,390	2	2,392
Artisans' tools and hardware specialties	9	479		479	547		547
Bicycles, tricycles, etc.	10	331		331	240		240
Boots and shoes	22	1,488	720	2,208	1,535	789	2,324
Boxes (wooden and paper)....	27	800	388	1,188	964	423	1,387
Brick, tile and sewer pipe....	23	72		72	70		70
Brooms, brushes and baskets.	16	114		114	144	1	145
Burial cases, caskets, coffins, etc.	3	254	70	324	324	275	599
Cement, lime, plaster, etc.	9	156	2	158	193	4	197
Chairs	10	2,729	235	2,964	2,636	200	2,836
Cigars, snuff and tobacco.....	50	643	286	929	648	208	856
Clothing	13	316	1,847	2,163	342	2,150	2,492
Confectioneries, crackers, etc.	12	372	377	749	372	54	426
Cooking and heating apparatus	5	828	3	831	820	3	823
Cooperage	15	535		535	411	1	412
Cotton and linen goods.....	6	195	275	470	188	276	464
Electrical and gas apparatus and supplies	17	983	52	985	936	57	993
Flour and feed	65	969	4	973	646	6	652
Furniture	38	2,193	28	2,221	2,476	45	2,521
Furs, gloves and mittens.....	9	56	90	146	65	111	176
Iron goods (malleable)	24	3,577	7	3,584	4,635	6	4,641
Knit goods	16	432	1,484	1,916	369	1,799	2,168
Lager beer	57	2,423	305	2,728	2,524	409	2,933
Leather	25	3,396	311	3,647	3,881	328	4,209
Lumber, lath and shingles....	124	5,365	20	5,385	9,294	23	9,267
Malt	16	415	1	416	280	3	283
Machines and machinery.....	84	4,386	10	4,396	5,276	18	5,294
Office and saloon fixtures....	7	397		397	466		466
Paints, oils and crude chemicals	5	89	6	95	84	10	94
Paper and pulp	31	2,389	532	2,901	2,574	619	3,193
Saddlery, harness, etc.	8	114	11	125	146	21	167
Sash, doors, blinds etc.	53	2,452	2	2,454	2,482	41	2,523
Sheet metal goods	23	1,493	347	1,840	1,549	318	1,867
Ship and boat building.....	6	577		577	642		642
Soap, lye, potash, etc.	8	107	64	171	108	74	182
Staves and heading	15	259		259	228		228
Stone (marble, granite, etc.)..	9	70		70	81		81
Toys and games	5	216	15	225	225	17	242
Trunks, valises, etc.	6	203	46	249	237	85	322
Veneer	7	265		265	322		322
Wagons, carriages and sleighs	39	2,099	33	2,132	2,461	36	2,497
Woodenware	8	1,234		1,234	1,402		1,402
Woolen and worsted goods ..	16	368	485	853	363	438	801
All industries	992	47,812	8,068	55,870	55,510	9,296	64,806

Smallest number of persons employed in 1898 and 1899, classified as to sex, by industries.

INDUSTRIES	Number of establishments.	Increase (+) or decrease (—) in the smallest number of male and female persons employed in 1899, as compared with 1898.		Increase (+) or decrease (—) in the smallest total persons employed in 1899, as compared with 1898.	
		Male.	Female	Total.	Per cent.
Agricultural implements.....	28	+ 283	.....	+ 283	+ 13.32
Artisans' tools and hardware specialties.....	9	+ 68	.....	+ 68	+ 14.19
Boots and shoes.....	10	+ 91	.....	+ 91	+ 27.49
Bicycles, tricycles, etc.....	22	+ 37	+ 69	+ 103	+ 4.80
Boxes (wooden and paper).....	27	+ 164	+ 35	+ 199	+ 16.75
Brick, tile and sewer pipe.....	23	+ 2	.....	+ 2	+ 2.73
Brooms, brushes, etc.....	16	+ 31	+ 1	+ 30	+ 26.51
Burial cases, caskets and coffins.....	3	+ 70	+ 205	+ 275	+ 84.57
Cement, lime, plaster, etc.....	9	+ 37	+ 2	+ 39	+ 24.63
Chairs.....	10	+ 93	+ 35	+ 128	+ 4.32
Cigars, snuff and tobacco.....	50	+ 5	+ 83	+ 88	+ 9.47
Clothing.....	13	+ 26	+ 303	+ 329	+ 15.21
Confectioneries, crackers, etc.....	12	.....	+ 127	+ 127	+ 16.95
Cooking and heating apparatus.....	5	+ 8	.....	+ 8	+ 0.96
Cooperage.....	15	+ 118	+ 1	+ 117	+ 21.85
Cotton and linen goods.....	6	+ 9	+ 1	+ 8	+ 1.70
Electrical and gas apparatus and supplies.....	17	+ 3	+ 5	+ 8	+ 0.31
Flour and feed.....	65	+ 323	+ 2	+ 321	+ 32.99
Furniture.....	38	+ 283	+ 17	+ 300	+ 13.50
Furs, gloves and mittens.....	9	+ 9	+ 21	+ 30	+ 20.55
Iron goods (malleable).....	24	+ 1,058	+ 1	+ 1,057	+ 51.81
Knit goods.....	16	+ 63	+ 315	+ 378	+ 13.14
Lager beer.....	57	+ 101	+ 134	+ 235	+ 7.51
Leather.....	25	+ 545	+ 17	+ 562	+ 15.41
Lumber, lath and shingles.....	124	+ 3,869	+ 3	+ 3,872	+ 71.90
Malt.....	16	+ 135	+ 2	+ 133	+ 31.97
Machines and machinery.....	64	+ 690	+ 6	+ 696	+ 20.43
Office and saloon fixtures, etc.....	7	+ 69	.....	+ 69	+ 17.38
Paints, oils and crude chemicals.....	5	+ 5	+ 4	+ 1	+ 1.05
Paper and pulp.....	31	+ 205	+ 57	+ 262	+ 10.09
Saddlery, harness, etc.....	8	+ 32	+ 10	+ 42	+ 3.35
Sash, doors, blinds, etc.....	58	+ 30	+ 39	+ 69	+ 2.81
Sheet metal goods.....	23	+ 58	+ 29	+ 87	+ 1.46
Ship and boat building.....	6	+ 65	.....	+ 65	+ 11.26
Soap, lye and potash.....	8	+ 1	+ 10	+ 11	+ 6.43
Staves and heading.....	15	+ 31	.....	+ 31	+ 11.97
Stone (marble, granite, etc.).....	9	+ 11	.....	+ 11	+ 15.71
Toys and games.....	5	+ 15	+ 2	+ 17	+ 7.55
Trunks, valises, etc.....	6	+ 34	+ 39	+ 73	+ 29.32
Veneer.....	7	+ 57	.....	+ 57	+ 21.51
Wagons, carriages and sleighs.....	39	+ 362	+ 3	+ 365	+ 17.12
Woodenware.....	8	+ 164	.....	+ 164	+ 13.24
Woolen and worsted goods.....	16	+ 5	+ 47	+ 52	+ 6.09
All industries.....	992	+ 7,698	+ 1,287	+ 8,985	+ 15.99

Greatest number of persons employed in 1898 and 1899, classified as to sex and age, by industries.

INDUSTRIES.	Number of establishments.	1898.					1899.				
		Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.
Agricultural implem'ts.	28	2,912	4	173	.....	3,089	3,227	2	101	.....	3,330
Artisans' tools, etc.	9	816	.....	133	.....	949	869	7	155	.....	1,021
Bicycles, etc.	10	1,258	.....	104	.....	1,362	754	.....	78	.....	834
Boots and shoes	22	1,101	573	579	198	2,450	1,086	639	271	239	2,235
Boxes	27	805	285	290	169	1,549	567	293	317	177	1,654
Brick, etc.	23	619	.....	68	.....	717	617	1	84	.....	702
Brooms, etc.	16	173	4	25	3	205	183	5	51	.....	239
Burial cases, etc.	3	235	59	21	12	327	258	33	21	23	357
Cement, etc.	9	340	4	12	.....	356	451	26	37	24	538
Chairs, etc.	10	2,671	135	500	184	3,474	2,819	131	456	131	3,537
Cigars and tobacco	50	594	142	131	178	1,045	733	187	133	106	1,158
Clothing.	13	313	2,288	32	208	2,841	363	2,263	31	211	2,868
Confectioneries, etc.	12	286	286	213	396	1,171	337	353	170	530	1,370
Cooking apparatus, etc.	5	832	8	303	.....	1,138	871	3	291	.....	1,165
Coopers	15	599	.....	44	.....	643	543	1	52	.....	596
Cotton and linen goods	6	199	209	51	56	445	161	238	39	48	486
Electrical apparatus, etc.	17	993	48	148	16	1,208	1,046	46	135	20	1,247
Flour and feed	65	1,077	9	3	.....	1,090	929	28	12	.....	969
Furniture	38	2,376	44	450	3	2,873	2,517	55	429	16	3,017
Furs, gloves, etc.	9	71	135	4	9	219	76	139	5	4	224
Iron goods	24	4,145	9	562	.....	4,716	5,087	17	565	2	5,671
Knit goods	16	302	926	172	793	2,192	349	1,198	174	854	2,575
Lager beer	57	2,417	270	726	180	3,693	2,548	348	196	193	3,275
Leather	25	3,916	244	240	68	4,468	4,164	244	317	89	4,814
Lumber, lath, etc.	124	14,664	103	460	4	15,231	18,193	89	526	3	18,811
Malt	16	542	1	2	1	546	534	3	8	1	546
Machinery	84	5,300	13	342	8	5,663	6,744	26	315	6	7,091
Office, fixtures, etc.	7	491	.....	77	.....	568	512	.....	59	.....	571
Paints, oils, etc.	5	98	7	1	.....	106	112	2	8	.....	122
Paper and pulp	31	2,656	562	67	70	3,355	2,791	684	125	77	3,631
Saddlery, harness, etc.	8	170	25	23	43	261	168	28	26	64	286
Sash, doors, etc.	50	2,883	17	402	48	3,350	3,322	19	389	31	3,761
Sheet metal goods	23	1,481	267	322	123	2,193	1,475	312	358	174	3,319
Ship and boat building	6	1,429	2	2	.....	1,430	1,338	3	2	.....	1,341
Soap, lye and potash	8	89	60	13	12	174	100	50	10	36	196
Staves and heading	15	422	.....	79	.....	501	354	.....	95	.....	479
Stone	9	188	.....	4	.....	192	255	.....	1	.....	256
Toys and games	5	213	9	141	39	402	245	14	106	31	396
Trunks, valises, etc.	6	202	46	54	37	339	211	45	67	52	375
Veneer	7	273	.....	112	.....	425	418	.....	116	.....	534
Wagons, carriages, etc.	39	2,561	43	173	.....	2,777	2,763	54	163	4	2,984
Woodenware	8	1,263	.....	247	.....	1,510	1,312	.....	218	.....	1,530
Woolen goods, etc.	16	394	423	68	190	1,075	401	418	62	139	1,020
All industries	992	61,398	7,234	7,111	3,033	81,771	72,164	7,954	6777	3,276	90,171

Greatest number of persons employed in 1898 and 1899, classified as to sex, by industries.

INDUSTRIES.	Number of establishments.	1898.			1899.		
		GREATEST NUMBER OF PERSONS EMPLOYED.			GREATEST NUMBER OF PERSONS EMPLOYED.		
		Males.	Females.	Totals.	Males.	Females.	Totals.
Agricultural implements	26	3,085	4	3,089	3,328	2	3,330
Artisans' tools and hardware specialties	9	949	.....	949	1,054	7	1,061
Bicycles, tricycles, etc.	10	1,380	.....	1,380	834	.....	834
Boots and shoes	22	1,679	771	2,450	1,357	873	2,230
Boxes (wooden and paper)....	27	1,096	454	1,549	1,184	470	1,654
Brick, tile and sewer pipe....	23	717	.....	717	701	1	702
Brooms, brushes and baskets.	16	198	7	205	234	5	239
Burial cases, caskets, coffins, etc.	3	256	71	327	279	78	357
Cement, lime, plaster, etc.	9	352	4	356	488	50	538
Chairs	10	3,171	303	3,474	3,275	262	3,537
Cigars, snuff and tobacco.....	50	725	320	1,045	966	292	1,258
Clothing	13	345	2,496	2,841	394	2,474	2,868
Confectioneries, crackers, etc.	12	509	662	1,171	507	863	1,370
Cooking and heating apparatus	5	1,155	3	1,158	1,162	3	1,165
Cooperage	15	643	.....	643	595	1	596
Cotton and linen goods.....	6	220	265	485	200	286	486
Electrical and gas apparatus and supplies	17	1,139	64	1,203	1,181	66	1,247
Flour and feed	65	1,080	10	1,090	941	28	969
Furniture	38	2,826	47	2,873	2,946	71	3,017
Furs, gloves and mittens....	9	75	144	219	81	143	224
Iron goods (malleable).....	24	4,707	9	4,716	5,662	19	5,681
Knit goods	16	474	1,718	2,192	523	2,052	2,575
Lager beer	57	2,643	450	3,093	2,744	531	3,275
Leather	25	4,156	312	4,468	4,481	333	4,814
Lumber, lath and shingles....	124	15,124	107	15,231	18,719	92	18,811
Malt	16	544	2	546	542	4	546
Machines and machinery	84	5,642	21	5,663	7,059	32	7,091
Office and saloon fixtures....	7	568	.....	568	571	.....	571
Paints, oils and crude chemicals	5	99	7	106	120	2	122
Paper and pulp	21	2,723	632	3,355	2,920	711	3,631
Saddlery, harness, etc.	8	193	68	261	194	92	286
Shah, doors, blinds, etc.....	58	3,285	65	3,350	3,711	50	3,761
Sheet metal goods	23	1,803	390	2,193	1,833	456	2,289
Ship and boat building	6	1,428	2	1,430	1,338	3	1,341
Soap, lye, potash, etc.	8	102	72	174	110	86	196
Staves and heading	15	501	.....	501	479	.....	479
Stone (marble, granite, etc.)..	9	192	.....	192	256	.....	256
Toys and games	5	354	48	402	351	45	396
Trunks, valises, etc.	6	256	83	339	278	97	375
Veneer	7	425	.....	425	534	.....	534
Wagons, carriages and sleighs	39	2,734	43	2,777	2,926	56	2,984
Woodenware	8	1,510	.....	1,510	1,530	.....	1,530
Woolen and worsted goods....	16	462	618	1,075	463	557	1,020
All industries	992	71,504	10,267	81,771	78,941	11,230	90,171

*Increase or decrease in the greatest number of persons employed in
1898 and 1899, by industries.*

INDUSTRIES.	Number of establishments.	Increase (+) or decrease (—) in the greatest number of males and females persons employed in 1899, as compared with 1898.		Increase (+) or decrease (—) in the greatest total persons employed in 1899, as compared with 1898.	
		Male.	Female.	Total.	Per cent.
Agricultural implements.....	26	+ 243	— 2	+ 241	+ 7.80
Artisans' tools and hardware specialties.....	9	+ 105	+ 7	+ 112	+ 11.80
Bicycles, tricycles, etc.....	10	— 526	—	— 526	— 38.68
Boots and shoes.....	22	— 322	+ 108	— 214	— 8.73
Boxes (wooden and paper).....	27	+ 19	+ 16	+ 105	+ 6.77
Brick, tile and sewer pipe.....	23	+ 16	+ 1	+ 15	+ 2.09
Brooms, brushes, etc.....	16	+ 16	—	+ 34	+ 16.58
Burial cases, caskets and coffins..	3	+ 23	+ 7	+ 30	+ 9.17
Cement, lime, plaster, etc.....	9	+ 136	+ 46	+ 182	+ 51.12
Chairs.....	10	+ 104	— 41	+ 63	+ 5.81
Cigars, snuff and tobacco.....	50	+ 140	— 28	+ 112	+ 10.71
Clothing.....	13	+ 49	— 22	+ 27	+ 0.95
Confectioneries, crackers, etc.....	12	+ 2	+ 201	+ 199	+ 16.99
Cooking and heating apparatus....	5	+ 7	—	+ 7	+ 0.60
Cooperage.....	15	— 48	+ 1	— 47	— 7.17
Cotton and linen goods.....	6	— 20	+ 21	+ 1	+ 0.20
Electrical and gas apparatus and supplies.....	17	+ 42	+ 2	+ 44	+ 3.65
Flour and feed.....	65	— 139	+ 18	— 121	— 11.10
Furniture.....	38	+ 120	+ 24	+ 144	+ 5.01
Furs, gloves and mittens.....	9	+ 6	— 1	+ 5	+ 8.47
Iron goods (malleable).....	24	+ 945	+ 10	+ 955	+ 20.25
Knit goods.....	16	+ 49	+ 334	+ 383	+ 17.47
Lager beer.....	57	+ 101	+ 81	+ 182	+ 5.89
Leather.....	25	+ 325	+ 21	+ 346	+ 7.74
Lumber, lath and shingles.....	124	+ 3,595	+ 15	+ 3,580	+ 23.04
Malt.....	16	— 2	+ 2	—	—
Machines and machinery.....	64	+ 1,417	+ 11	+ 1,428	+ 25.21
Office and saloon fixtures, etc.....	7	+ 3	—	+ 3	+ 0.52
Paints, oils and crude chemicals..	5	+ 21	— 5	+ 16	+ 13.09
Paper and pulp.....	31	+ 197	+ 79	+ 276	+ 8.22
Saddlery, harness, etc.....	8	+ 1	+ 24	+ 25	+ 9.50
Sash, doors, blinds, etc.....	58	+ 426	— 15	+ 411	+ 12.26
Sheet metal goods.....	23	+ 30	+ 96	+ 126	+ 5.74
Ship and boat building.....	6	+ 90	+ 1	+ 89	+ 6.22
Soap, lye and potash.....	8	+ 8	+ 14	+ 22	+ 12.64
Staves and headings.....	15	— 22	—	— 22	— 4.39
Stone (marble, granite, etc.).....	9	+ 64	—	+ 64	+ 33.33
Toys and games.....	5	+ 17	— 3	+ 14	+ 3.45
Trunks, valises, etc.....	6	+ 22	+ 14	+ 36	+ 10.62
Veneer.....	7	+ 109	—	+ 109	+ 25.65
Wagons, carriages and sleighs.....	39	+ 43	+ 15	+ 58	+ 2.08
Woodenware.....	8	+ 20	—	+ 20	+ 1.32
Woolen and worsted goods.....	16	+ 1	— 56	— 55	— 5.11
All industries.....	962	+ 7,437	+ 963	+ 8,400	+ 10.27

Of the *seven* preceding tables, the first and second in order relates to the "Average Number of Persons Employed;" the third and fourth relates to the "Smallest Number of Persons Employed;" and the fifth, sixth and seventh relates to the "Greatest number of Persons Employed."

AVERAGE NUMBER OF PERSONS EMPLOYED.

The two first tables in order relate as said to the average number of persons employed. Of these two the first shows, by industries, the average number of male, female and total persons employed in 1898 and 1899. The second shows, by industries and for males, females, and total persons, the increase and decrease in number in 1899 as compared with 1898. For the total persons the difference between the two years is represented both by the number and their per cent.

The next exhibit shows the average number of persons, classified as to sex, employed in 1898 and 1899, by all industries and the increase, in number and per cent. for the latter year.

Year.	Males.	Females.	Totals.
1898.....	58,412	9,102	67,514
1899.....	65,662	10,197	75,859
Increase in 1899.....	7,250	1,095	8,345
Per cent. of increase.....	12.41	12.03	12.36

Of 67,514, the total average persons employed in 1898, 58,412, or 86.52 per cent., were males, and 9,102, or 13.48 per cent. females.

Of the 75,859 persons, the total average employed in 1899, 65,662, or 86.56 per cent. were males, and 10,197, or 13.44 per cent. were females.

Of the 8,345 persons who are seen to be the increase for 1899 as compared with the former year, 7,250, or 86.80 per cent. were males, and 1,095, or 13.12 per cent. were females.

Comparing the numbers as between the two years we find:

That the total average number of persons employed increased from 67,514, in 1898, to 75,859, in 1899, a gain of 8,345, or 12.36 per cent.

That the male employees increased from 58,412 in 1898, to 65,662, in 1899, a gain of 7,250 persons, or 12.41 per cent.

That the average number of female employees increased from 9,102, in 1898, to 10,197, in 1899, a gain of 1,095 or 12.03 per cent.

In 1899 as compared with 1898 there was thus, on the whole, an increase, in the total average number of persons employed, of 8,345 or 12.36 per cent. Of this increase that for males was slightly greater than that for females.

For "All Industries" there was thus an increase for 1899. This increase, however, is not shared in by each industry. This is plain from the second table in order, which shows that of the 43 industries included 35 show an increase in the average number employed, and 8 a decrease. Those showing a decrease are: Bicycles, etc., Chairs, Cooperage, Cotton and Linen Goods, Flour and Feed, Malt, Ship and Boat Building, Woolen and Worsted Goods. As between these industries the decrease varies from 34.16, to 1.51 per cent. The effect of a smaller number of hands in these industries is apparent in their volume of production. Turning back to the table of goods made we find there that these industries either show a decrease in the output, or, when this is not the case, an increase which, when compared to that for other industries is seen to be very small. For industries showing here an increase in the average number employed the increase in the volume of production is also, in most cases, quite marked. There are some exceptions to this, but in most cases what was said holds good.

SMALLEST NUMBER OF PERSONS EMPLOYED.

The data in the first and second in order of the preceding seven tables have thus been briefly considered under their proper head. Under this head we will now take up the third and fourth tables in order. These tables, as seen, relate to the "Smallest Number of Persons Employed" during the month when the smallest number were employed in 1898 and 1899. The figures for each year and industry are presented separately, as are also those for sex and the totals. The third table in order shows, by industries, in 1898 and 1899, the smallest number of male, female and total

persons employed. The fourth shows the increase or decrease, as the case may be, in 1899 as compared with 1898.

In the following exhibit we find, for all industries, the smallest total number employed, each year, together with the increase, as a whole, for 1899.

Year.	Males.	Females.	Totals.
1898.....	47,812	8,058	55,870
1899.....	55,510	9,295	64,805
Increase in 1899.....	7,698	1,237	8,935
Per cent. of increase.....	16.10	15.35	15.99

In this case we will consider the increase in 1899 as compared with 1898 first. From above exhibit it is seen that the total smallest number of persons employed was 55,870 in 1898, and 64,805 in 1899, an increase in the latter year of 8,935 persons, or 15.99 per cent.

That, for the two years, the respective number of male persons employed was 47,812 and 55,510, an increase in 1899, of 7,298, or 16.10 per cent.

That the female employes increased from 8,058 to 9,295 persons, or 15.35 per cent.

The increase in 1899 in the total smallest number of persons employed was thus 8,935, or 15.99 per cent.

We have seen the increase in 1899 in the smallest number of persons employed. Now we will consider, for each year, the proportion of male and female employes.

In 1898, the smallest total number of persons employed was 55,870. Of these 47,812, or 85.58 were male, and 8,058, or 14.42 per cent. were female employes.

In 1899, the smallest number employed was 64,805. Of these 55,510, or 85.66 per cent. were males, and 9,295, or 14.34 per cent. were females.

As seen, the increase in the total smallest number of persons employed in 1899 as compared with 1898, was 8,935. Of this number 7,698, or 86.15 per cent. were males and 1,237, or 13.85 per cent. were females.

Comparing the proportion for the two years we find only a

small change. In the latter year the proportion of females was a trifle smaller. The actual figures are 14.42 per cent. in 1898, as against 14.35 in 1899.

Concerning the increase and decrease as between the different industries the following facts may be noticed:

Of the 43 establishments included 10 show a decrease in the smallest total number of persons employed and 33 an increase. Of the 10 industries thus showing a decrease, 5 showed a decrease in the average persons employed also. This fact probably indicates that, on the whole, the general tendency was in the same direction in both cases. For both, those showing a decrease and those showing an increase, there is a great variation in the changes which took place. In some cases the percentage is high; in others low.

GREATEST NUMBER OF PERSONS EMPLOYED.

Four of the seven tables, those relating to the average and to the smallest number of persons employed have thus been explained. The remaining three tables relate to the "Greatest Number of Persons" employed during the week when the greatest number were at work, and these tables will be considered here.

The first of these three tables, or the fifth in order, gives, by industries in 1898 and 1899, the greatest number of persons classified as to sex and age. The second table, or the sixth in order, shows the greatest number of males, females, and total persons employed. The third table, or seventh in order, shows the increase and decrease in the male, female and total persons employed, in 1898 as compared with 1899.

The first of these tables, that relating to the greatest number of male and female persons, over and under 18 years of age, and the total for all will be taken up in the following exhibit:

Year.	Males 18 or over.	Females 18 or over.	Males under 18.	Females under 18.	Totals.
1898.	64,393	7,234	7,111	3,033	81,771
1899.	72,164	7,954	6,777	3,276	90,171
Increase, decrease in 1899.	+ 7,771	+ 720	- 334	+ 243	+ 8,400
Per cent.	+ 12.05	+ 9.90	- 4.70	+ 8.00	+ 10.27

Comparing the figures for 1898 and 1899 in this exhibit we find:

That the total number increased from 81,771 to 90,171, a gain of 8,400 persons, or 10.27 per cent.

That the male persons 18 years or over increased from 64,393 to 72,164, a gain of 7,771 persons, or 12.05 per cent.

That the females 18 years and over increased from 7,234 to 7,954, a gain of 720 persons, or 9.90 per cent.

That the males under 18 years decreased from 7,111 to 6,777, a loss of 334, or 4.70 per cent.

That females under 18 years increased from 3,033 to 3,276 persons, a gain of 243, or 8 per cent.

In all cases but one there was thus an increase. The net increase for all was, as seen, 10.27 per cent.

Considered with a view of ascertaining the relation of the number of persons in each one of the classes given to the total number, for each year, the following results are obtained:

In 1898 the greatest total persons employed was 81,771. Of these 64,393, or 78.84 per cent. were males 18 years of age and over; 7,234, or 8.85 per cent. were females 18 years and over; 7,111, or 8.61 per cent. were males under 18 years; and 3,033, or 3.70 per cent. were females over 18 years of age.

In 1899 the greatest number was 90,171. Of these 72,164, or 80.03 per cent. were males 18 years of age and over; 7,954, or 8.82 per cent. were females 18 years and over; 6,777, or 7.52 per cent. were males under 18 years; and 3,276, or 3.63 per cent. were females under 18 years of age.

Of the net increase in 1899 as compared with 1898, which was 8,400 persons, 7,680, or 91.67 per cent. were males and 720, or 8.33 per cent. were females.

The above facts are again presented in the following exhibit:

CLASSIFICATION.	1898.	1899.
	Per cent.	Per cent.
Males 18 years and over.....	78.84	80.03
Females 18 years and over.....	8.85	8.82
Males under 18 years.....	8.61	7.52
Females under 18 years.....	3.70	3.63
Total.....	100.00	100.00

Comparing these figures we find that in 1899 there is an increase in the number of males 18 years and over from 78.84 to 80.03, or 1.19 per cent. This increase was followed by a decrease for the other classes. Thus females 18 years and over decreased .03 per cent., males under 18 years 1.09 per cent., and females under 18 years .07 per cent. In 1898, those 18 years and over constituted 87.69, and those under 18 years 12.31 per cent. In 1899, those 18 years and over were 88.85, and those under 18 years 11.15 per cent. Of those under 18 there was thus a decrease of 1.16 per cent. in the latter year.

The next exhibit is devoted to the sixth and seventh tables in order. As said, the first of these tables show the greatest number of male, female, and total persons employed in 1898 and 1899. The second shows, in each case, the increase and decrease in the greatest number employed, in 1899 as compared with 1898.

Year.	Males.	Females.	Totals.
1898.....	71,504	10,267	81,771
1899.....	78,941	11,230	90,171
Increase in 1899.....	7,437	963	8,400
Per cent. of increase.....	10.40	9.38	10.27

According to these figures the following changes in the greatest number of persons employed took place between 1898 and 1899.

The males increased from 71,504 to 78,941, a gain of 7,437 persons, or 10.40 per cent.

The female persons employed increased from 10,267 to 11,230, a gain of 963, or 9.38 per cent.

The total greatest persons employed increased from 81,771 to 90,171, a gain of 8,400 persons, or 10.27 per cent.

These facts show the increase in 1899 as compared with 1898. We will now consider the relative number of males and females each year as well as in the increase which was found for 1899.

In 1898, the total greatest number of persons employed was 81,771. Of these 71,504 persons, or 87.44 per cent. were males, and 10,267 persons, or 12.56 per cent. were females.

In 1899, the greatest number employed was 90,171. Of these 78,941 persons, or 87.65 per cent. were males, and 11,230 persons, or 12.35 per cent. were female employees.

The increase in the total number for 1899 was 8,400 persons, of which 7,437 persons, or 88.54 per cent. were males, and 963, or 11.46 per cent. were females.

All of the 43 industries included, however, did not contribute to this increase. Only 35 did so. The other 8 showed a decided decrease in the greatest number employed in 1899 as compared with the preceding year. As the figures include all industries regardless of whether there was an increase or decrease in the number employed, the increases given above are net increases. Those showing a decrease are:

Bicycles, Tricycles, Etc.; Boots and Shoes; Brick, Tile, Etc.; Cooperage; Flour and Feed; Ship and Boat Building; Staves and Heading; Woolen and Worsted Goods.

Industries giving an increase are not enumerated. The changes, whether towards a greater or less number of employees vary greatly as between the different industries. In some cases they amount to one-third or even one-half of the number employed the previous year, in others to only a fraction of one per cent.

Among other things we have now under this head shown, the average, smallest, and greatest number of persons employed in 1898 and 1899; the increase, in each case, in the number employed in 1899, as compared with 1898; the proportion of males and females in each instance; and the respective industries in which there was an increase and decrease in the persons employed. A few of the leading results will be summarized here.

The following exhibit will show the per cent. of increase in the average, smallest, and greatest persons employed in 1899 as compared with 1898:

Per cent. of increase in number.

Classification	Males.	Females.	Totals.
	Per cent.	Per cent.	Per cent.
In average number.....	12.41	12.08	12.36
In smallest number.....	16.10	15.35	15.90
In greatest number.....	10.40	9.38	10.27

In the average number employed there was thus the following net increases: Males 12.41, females 12.03, both 12.36 per cent.

For the smallest number employed the respective net increase was, males 16.10, females 15.35, both 15.99 per cent.

For the greatest number employed the respective increase was, males 10.40, females 9.38, both, or total 10.27 per cent.

As a whole these relations indicate that the range of employment was narrower, and employment therefore more steady in 1899 than in 1898. This, in addition to the increase in number, certainly must have had a tendency to promote the general welfare.

In the next exhibit we find for the average, smallest, and greatest number employed the per cent. of males and females of the total number in 1898:

Classification.	Males.	Females.	Totals.
	Per cent.	Per cent.	Per cent.
In average number.....	86.52	13.48	100.00
In smallest number.....	85.58	14.42	100.00
In greatest number.....	87.44	12.56	100.00

This exhibit shows very plainly the proportion of males and females in 1898. The per cent. of the females varies from 12.56 when the greatest number were employed to 14.42 when the smallest number were at work. The average per cent. of females was 13.48.

The following exhibit show the per cent. of males and females of the total number in 1899, when the average, smallest, and greatest number were employed:

Classification.	Males.	Females.	Totals.
	Per cent.	Per cent.	Per cent.
In average number.....	86.88	13.12	100.00
In smallest number.....	85.68	14.31	100.00
In greatest number.....	87.65	12.35	100.00

We find here the proportion of males and females in 1899, when the average, smallest, and greatest number of persons were

employed. The males varied from 87.65 to 85.66 per cent. the average being 86.88 per cent. The females varied from 12.35 to 14.34 per cent., the average being 13.12 per cent. In this case, as for 1898, the greatest per cent. of females is found when the smallest number of persons were employed. Comparing the figures for the two tables it will be noticed that the proportion of females is slightly lower in 1899 than in 1898.

The respective number of industries which showed an increase and decrease in the total persons employed, in 1899 as compared with 1898, at the average, smallest, and greatest period of employment are as follows:

In the average number of persons employed, thirty-five industries showed an increase and eight industries a decrease.

In the smallest number of persons employed, thirty-three industries showed an increase and ten a decrease.

In the greatest number of persons employed, thirty-five industries showed an increase and eight industries showed a decrease.

Something ought also be said concerning the range of employment as between the smallest, average and greatest number of persons employed each year. In 1898 the smallest number was 55,870, the average number 67,514, and the greatest number 81,771. Between the smallest and the average there was thus a difference of 11,644; between the smallest and the greatest of 25,901; and between the average and the greatest of 14,257 persons.

In 1899 the smallest number of persons employed was 64,805; the average 75,859; the greatest 90,171. Between the smallest and the average number there was a difference of 11,054 persons; between the smallest and the greatest, of 25,366 persons; and between the average and the greatest number a difference of 14,312 persons.

The difference between the smallest and the average number was thus 11,644 in 1898, and 11,054 in 1899. This shows that in this case the range was the widest in 1898.

The difference between the smallest and the greatest number was 25,901 persons in 1898, and 25,366 persons in 1899. In this case also the range was wider in 1898 than in the succeeding year.

The difference between the average and the greatest number employed was 14,257 persons in 1898 and 14,312 persons in 1899. Here alone we have the widest range in the latter year.

The next exhibit endeavors to show the per cent. relation of the above range.

Classification.	1898.	1899.
Smallest	68.33	71.87
Average	82.56	84.13
Greatest	100.00	100.00

This shows for both years the respective per cent. of the smallest and average of the greatest number. In other words, if the greatest number is regarded as one hundred the relation of this to the others is such that the smallest number should be expressed as 68.33 in 1898, and 71.87 in 1899; and the average as 82.56 in 1898, and 84.13 in 1899. These figures also indicate a wider range for the former than for the latter year. In other words, 1899 offered chances for steadier employment than the year preceding it.

As said already, by the smallest number of persons is meant the number for the month when the smallest number were employed. By the average number is meant the yearly average obtained from the number employed by months. By the greatest number is meant the number employed during the week when the greatest number were employed. This is the basis upon which the figures here are computed.

Persons employed by the hour, day, and piece.

AGRICULTURAL IMPLEMENTS.

(26 establishments.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
By the hour.....	395	.....	6	.....	402	343	2	.....	.....	345
By the day.....	1,629	4	85	.....	1,718	1,742	.....	51	.....	1,793
By the piece.....	587	.....	83	.....	670	1,142	.....	50	.....	1,192
Aggregates.....	2,611	4	173	.....	3,089	3,227	2	101	.....	3,330

ARTISANS' TOOLS AND HARDWARE SPECIALTIES.

(9 establishments.)

By the hour.....	440	.....	84	.....	524	487	.....	76	.....	563
By the day.....	82	.....	21	.....	103	70	7	25	.....	102
By the piece.....	294	.....	28	.....	322	342	.....	54	.....	396
Aggregates.....	816	.....	133	.....	949	899	7	155	.....	1,061

BICYCLES, TRICYCLES, ETC.

(10 establishments.)

By the hour.....	491	.....	11	.....	502	58	.....	.....	.....	56
By the day.....	227	.....	72	.....	299	379	.....	49	.....	428
By the piece.....	538	.....	21	.....	559	319	.....	29	.....	588
Aggregates.....	1,256	.....	104	.....	1,360	756	.....	78	.....	834

BOOTS AND SHOES.

(22 establishments.)

By the hour.....	63	17	124	38	242	135	63	88	69	360
By the day.....	668	342	443	92	1,545	661	356	90	92	1,199
By the piece.....	369	213	12	68	662	260	215	92	78	675
Aggregates.....	1,100	573	579	198	2,450	1,056	639	271	239	2,234

BOXES (WOODEN AND PAPER).

(27 establishments.)

By the hour.....	289	10	126	3	428	397	13	114	11	535
By the day.....	422	40	152	51	671	378	34	188	54	654
By the piece.....	88	235	12	115	450	92	246	18	112	465
Aggregates.....	805	285	290	169	1,549	867	293	317	177	1,554

Persons employed by the hour, day, and piece—continued.

BRICK, TILES AND SEWER PIPE.

(28 establishments.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
By the hour.....	105	.....	8	.....	114	115	.....	84	.....	149
By the day.....	523	.....	55	.....	531	471	1	50	.....	522
By the piece.....	10	.....	2	.....	22	81	.....	.....	.....	31
Aggregates.....	649	.....	68	.....	717	617	1	84	.....	702

BROOMS, BRUSHES AND BASKETS.

(16 establishments.)

By the hour.....	11	.....	2	1	14	23	.....	6	.....	29
By the day.....	76	4	11	2	93	81	5	13	.....	99
By the piece.....	86	.....	12	.....	98	79	.....	32	.....	111
Aggregates.....	173	4	25	3	205	183	5	51	.....	239

FUNERAL CASES, CASKETS, COFFINS, ETC.

(3 establishments.)

By the hour.....	100	.....	3	.....	103	.....	.....	.....	.....	.....
By the day.....	135	59	13	12	224	247	43	21	25	336
By the piece.....	.....	.....	.....	.....	.....	11	10	.....	.....	21
Aggregates.....	235	59	21	12	327	258	53	21	25	357

CEMENT, LIME, PLASTER, ETC.

(9 establishments.)

By the hour.....	26	.....	.....	.....	26	199	21	12	18	250
By the day.....	314	2	12	.....	328	238	3	25	.....	286
By the piece.....	.....	2	.....	.....	2	14	.....	.....	6	22
Aggregates.....	340	4	12	.....	356	451	26	37	24	538

CHAIRS.

(10 establishments.)

By the hour.....	160	2	50	.....	212	844	26	129	24	1,023
By the day.....	2,181	133	429	168	2,911	1,822	102	308	107	2,339
By the piece.....	230	.....	21	.....	251	153	3	19	.....	175
Aggregates.....	2,671	135	500	168	3,474	2,819	131	456	131	3,537

Persons employed by the hour, day, and piece—continued.

CIGARS, SNUFF AND TOBACCO.

(50 establishments.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
By the hour	209	54	63	110	436	14	4	3	.....	21
By the day	385	83	68	68	609	219	61	80	53	413
By the piece .....	.....	.....	.....	.....	.....	500	122	50	47	719
Aggregates	594	142	131	178	1,045	733	187	133	106	1,156

CLOTHING.

(23 establishments.)

By the hour	10	166	.....	.....	176	29	40	.....	6	75
By the day	230	356	32	96	714	269	160	27	69	515
By the piece	73	1,766	.....	112	1,961	75	2,063	4	136	2,278
Aggregates	313	2,263	32	208	2,641	363	2,263	31	211	2,868

CONFECTIONERIES, CRACKERS, ETC.

(12 establishments.)

By the hour .....	.....	.....	.....	.....	.....	64	50	3	67	184
By the day	296	266	213	396	1,171	273	261	167	460	1,161
By the piece .....	.....	.....	.....	.....	.....	.....	22	.....	3	26
Aggregates	296	266	213	396	1,171	337	333	170	530	1,370

COOKING AND HEATING APPARATUS.

(5 establishments.)

By the hour	378	.....	28	.....	406	319	.....	20	.....	339
By the day	139	3	71	.....	216	140	3	71	.....	214
By the piece	336	.....	204	.....	539	412	.....	200	.....	612
Aggregates	852	3	303	.....	1,155	871	3	291	.....	1,165

COOPERAGE.

(15 establishments.)

By the hour	34	.....	34	.....	68	102	.....	22	.....	124
By the day	96	.....	10	.....	106	57	1	7	.....	65
By the piece	470	.....	.....	.....	470	364	.....	23	.....	407
Aggregates	599	.....	44	.....	643	543	1	52	.....	596

Persons employed by the hour, day, and piece—continued.

COTTON AND LINEN GOODS.

(5 establishments.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
By the hour	1	5	.....	1	7	15	15	.....	.....	30
By the day	69	38	7	12	126	74	50	5	3	132
By the piece	99	166	44	43	352	72	173	34	46	324
Aggregates	169	209	51	56	479	161	238	39	48	436

ELECTRICAL AND GAS APPARATUS AND SUPPLIES.

(17 establishments.)

By the hour	201	13	51	15	285	428	27	52	20	527
By the day	751	21	83	1	856	558	14	78	.....	650
By the piece	41	9	12	.....	62	60	5	5	.....	70
Aggregates	993	48	146	16	1,203	1,046	46	135	20	1,247

FLOUR AND FEED.

(65 establishments.)

By the hour	69	.....	.....	.....	69	12	.....	.....	.....	12
By the day	1,004	9	3	1	1,017	915	28	12	.....	955
By the piece	4	.....	.....	.....	4	2	.....	.....	.....	2
Aggregates	1,077	9	3	1	1,080	929	28	12	.....	969

FURNITURE.

(38 establishments.)

By the hour	460	23	116	1	600	671	28	119	2	820
By the day	1,551	12	292	2	1,856	1,542	18	285	13	1,858
By the piece	366	9	43	.....	417	304	9	25	1	339
Aggregates	2,376	44	450	3	2,873	2,517	55	429	16	3,017

FURS, GLOVES AND MITTENS.

(9 establishments.)

By the hour	14	18	1	1	34	30	5	1	.....	37
By the day	33	13	2	7	55	18	4	2	.....	24
By the piece	24	104	1	1	130	28	130	2	3	163
Aggregates	71	135	4	9	219	76	139	5	4	224

Persons employed by the hour, day, and piece—continued.

IRON GOODS (MALLEABLE).

(24 establishments.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
By the hour	1,351	.....	229	.....	2,080	2,432	.....	174	.....	2,606
By the day	1,482	9	247	.....	1,738	1,565	17	319	2	1,893
By the piece	812	.....	86	.....	898	1,100	.....	72	.....	1,172
Aggregates	4,145	9	562	.....	4,716	5,087	17	565	2	5,671

KNIT GOODS.

(16 establishments.)

By the hour	2	48	31	90	171	20	55	17	78	170
By the day	200	298	53	196	747	245	387	68	332	1,032
By the piece	100	579	88	507	1,274	84	766	89	444	1,373
Aggregates	302	925	172	793	2,192	349	1,198	174	854	2,575

LAGER BEER.

(57 establishments.)

By the hour	45	10	14	1	70	25	2	.....	.....	27
By the day	2,372	280	212	179	3,023	2,511	346	196	183	3,236
By the piece .....	.....	.....	.....	.....	.....	12	.....	.....	.....	12
Aggregates	2,417	270	226	180	3,093	2,548	348	196	183	3,275

LEATHER.

(25 establishments.)

By the hour	1,149	4	89	.....	1,242	1,363	.....	125	.....	1,488
By the day	2,210	10	118	.....	2,338	2,276	236	97	89	2,701
By the piece	557	230	33	68	888	526	5	95	.....	626
Aggregates	3,916	244	240	68	4,468	4,164	244	317	89	4,814

LUMBER, LATH AND SHINGLES.

(124 establishments.)

By the hour	1,602	29	20	.....	1,651	1,160	.....	21	.....	1,181
By the day	12,864	67	427	4	13,362	16,865	81	485	3	17,424
By the piece	198	7	13	.....	218	178	8	20	.....	206
Aggregates	14,644	103	460	4	15,231	18,193	89	526	3	18,811

*Persons employed by the hour, day, and piece—continued.***MALT.**

(16 establishments.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 15 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 15 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
By the hour	7	.....	.....	.....	7	80	.....	.....	.....	80
By the day	535	1	2	1	539	474	8	8	1	486
By the piece .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aggregates	542	1	2	1	546	534	3	8	1	546

MACHINES AND MACHINERY.

(84 establishments.)

By the hour	3,425	7	155	.....	3,587	4,633	13	131	.....	4,777
By the day	1,442	6	130	6	1,584	1,646	18	162	6	1,827
By the piece	433	.....	57	2	492	465	.....	22	.....	487
Aggregates	5,300	13	342	8	5,663	6,744	26	315	6	7,091

OFFICE AND SALOON FIXTURES, ETC.

(7 establishments.)

By the hour	385	.....	57	.....	442	429	.....	54	.....	483
By the day	4	.....	20	.....	24	68	.....	5	.....	73
By the piece	102	.....	.....	.....	102	15	.....	.....	.....	15
Aggregates	491	.....	77	.....	568	512	.....	59	.....	571

PAINTS, OILS AND CRUDE CHEMICALS.

(5 establishments.)

By the hour	22	.....	.....	.....	22	25	.....	.....	.....	25
By the day	76	7	1	.....	84	87	2	8	.....	97
By the piece .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aggregates	98	7	1	.....	106	112	2	8	.....	122

PAPER AND PULP.

(31 establishments.)

By the hour	90	4	6	14	114	236	22	61	13	382
By the day	2,536	433	59	36	3,063	2,390	461	54	41	2,946
By the piece	31	125	2	20	178	116	161	13	23	303
Aggregates	2,656	562	67	70	3,355	2,792	634	128	77	3,631

Persons employed by the hour, day, and piece—continued.

SADDLERY, HARNESS, ETC.

(8 establishments.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
By the hour	8	.....	.....	.....	8	.....	.....	.....	.....	.....
By the day	62	15	13	39	134	78	13	22	21	133
By the piece	106	10	5	4	119	92	15	4	43	154
Aggregates	170	25	23	43	261	168	28	26	64	286

SASH, DOORS, BLINDS, ETC.

(58 establishments.)

By the hour	1,553	10	262	48	1,873	1,871	17	262	27	2,177
By the day	1,296	5	140	.....	1,440	1,411	2	117	2	1,532
By the piece	35	2	.....	.....	37	40	.....	10	2	52
Aggregates	2,883	17	402	48	3,350	3,322	19	389	31	3,761

SHEET METAL GOODS.

(23 establishments.)

By the hour	265	.....	8	.....	273	286	34	13	7	340
By the day	1,065	238	209	92	1,594	1,080	278	342	167	1,877
By the piece	161	29	105	31	326	99	.....	3	.....	102
Aggregates	1,481	267	322	123	2,193	1,475	312	358	174	2,319

SHIP AND BOAT BUILDING.

(6 establishments.)

By the hour	806	2	.....	.....	808	737	3	2	.....	742
By the day	410	.....	2	.....	412	449	.....	.....	.....	449
By the piece	210	.....	.....	.....	210	150	.....	.....	.....	150
Aggregates	1,426	2	2	.....	1,430	1,336	3	2	.....	1,341

SOAP, LYE AND POTASH.

(8 establishments.)

By the hour	41	14	4	2	61	47	18	5	13	83
By the day	44	32	9	7	92	48	20	4	19	91
By the piece	4	14	.....	3	21	5	12	1	4	22
Aggregates	89	60	13	12	174	100	50	10	36	196

Persons employed by the hour, day and piece—continued.

STAVES AND HEADING.

(15 establishments.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
By the hour	40	.....	10	.....	50	32	.....	16	.....	48
By the day	370	.....	61	.....	431	343	.....	76	.....	419
By the piece	12	.....	8	.....	20	9	.....	3	.....	12
Aggregates	422	.....	79	.....	501	384	.....	95	.....	479

STONE, GRANITE, MARBLE, ETC.

(9 establishments.)

By the hour	153	.....	4	.....	157	207	.....	1	.....	208
By the day	35	.....	.....	.....	35	47	.....	.....	.....	47
By the piece .....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Aggregates	188	.....	4	.....	192	255	.....	1	.....	256

TOYS AND GAMES.

(5 establishments.)

By the hour .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
By the day	200	9	112	39	360	209	9	86	31	335
By the piece	13	.....	29	.....	42	36	5	20	.....	61
Aggregates	213	9	141	39	402	245	14	106	31	396

TRUNKS, VALISES, ETC.

(6 establishments.)

By the hour	50	10	10	3	73	54	15	16	10	95
By the day	84	23	32	31	170	104	14	17	20	155
By the piece	68	13	12	3	96	53	16	34	22	125
Aggregates	202	46	54	37	339	211	45	67	52	375

VENEER.

(7 establishments.)

By the hour	23	.....	.....	.....	23	.....	.....	.....	.....	.....
By the day	230	.....	122	.....	342	355	.....	98	.....	453
By the piece	30	.....	30	.....	60	63	.....	18	.....	81
Aggregates	273	.....	152	.....	425	418	.....	116	.....	534

Persons employed by the hour, day, and piece—continued.

WAGONS, CARRIAGES AND SLEIGHS.

(39 establishments.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
By the hour	588	6	38	.....	632	451	6	21	.....	478
By the day	939	20	82	.....	1,091	1,434	23	98	1	1,556
By the piece	984	17	53	.....	1,054	878	28	44	3	960
Aggregates	2,561	43	173	.....	2,777	2,763	54	163	4	2,964

WOODENWARE.

(8 establishments.)

By the hour .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
By the day	1,024	.....	143	.....	1,167	1,122	.....	118	.....	1,240
By the piece	239	.....	104	.....	343	190	.....	100	.....	290
Aggregates	1,263	.....	247	.....	1,510	1,312	.....	218	.....	1,530

WOOLEN AND WORSTED GOODS.

(16 establishments.)

By the hour	38	11	5	18	72	58	32	14	16	120
By the day	242	200	46	190	648	228	202	44	106	581
By the piece	114	212	17	12	355	114	184	4	17	319
Aggregates	394	423	68	190	1,075	401	418	62	139	1,020

The foregoing table, which covers several pages, deals with the hour, day and piece hands. The data is carefully classified. In the first place we find that a separate or sub-table has been allowed for each industry. This facilitates inspection and comparisons. Then the persons employed are divided according to age and sex. Males and females 18 years of age or over are given separately, as are male and females under this age. Employment is also classified. In this respect we find separately those employed by the hour, day or piece. As a whole, the table shows, by industries, for 1898 and 1899 the respective number of hour, day and piece hands, classified as to sex and age.

Many things may be seen from a general inspection of this table. In 1898, four industries employed no one by the hour. In 1899 five followed this course. One feature about this seems a little peculiar. Of the industries in the two years, employing no one by the hour, only two were the same. These two are toys, etc., and woodenware. This indicates frequent changes in this mode of employment. Cigars, etc., confectioneries, employed no one by the hour in 1898, but in 1899 they did so. Burial cases, etc., saddlery, etc., and veneer employed by the hour in 1898 but not in 1899. This illustrates what the changes may be in this respect.

Hiring by the day is by far the most common. This, whether pay day is weekly, semi-weekly or monthly. The day is also the most convenient unit, a unit that is applicable nearly always. There are a few industries here in which other methods of hiring predominate, but they are not numerous, nor proportionately great.

Piece work appears quite common, more so, perhaps, than one would suppose. It is undoubtedly true that under the factory system piece work has decreased. Still there are many industries with highly developed machinery and division of labor where the operator is working by the piece, dozen, etc. In 1898, six industries had no piece workers; in 1899 there were only two in this class. This would indicate that piece work is on the decrease; but such a conclusion would be hasty. In many industries the proportion of piece hands is small. An insignificant change in the number, in such cases, might be enough to change the industry from one class to another, only changes in the actual number of piece workers can be safely used as a measure of growth or decline in this respect. In several industries such as clothing, knit goods, etc., the proportion of piece hands is quite large.

To study the social and economic effect of these different ways of employment would be interesting, and perhaps of value. This, however, is beyond the scope of this inquiry. The analysis is confined to the facts as developed. As a better or more comprehensive view can be had from summaries than details, the figures for the foregoing industries have been combined in the following exhibit, so as to show the total for all:

Total hour, day and piece hands, 45 industries, 992 establishments.

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.
By the hour.....	15,492	414	1,586	236	17,728	18,461	516	1,612	332	20,921
By the day.....	40,389	2,990	4,322	1,740	49,441	48,168	2,261	3,979	1,905	54,313
By the piece.....	8,512	3,880	1,203	1,057	14,652	8,535	4,177	1,186	989	14,887
Totals.....	64,393	7,284	7,111	3,033	81,771	72,164	7,954	6,777	3,276	90,171
Per cent.....	78.84	8.85	8.61	3.70	100.00	80.03	8.82	7.52	3.63	100.00

The preceding exhibit represents, for the data contained, all industries. That is it includes the sum of the figures in the tables which precede it. In form, this exhibit is precisely the same as that for each industry in the table of which it is a summary. To combine in it the figures for all industries was therefore a matter of addition only. The exhibit can be read both downwards through the columns, and across the page. Read downwards we find for each class of employes the respective number employed by the hour, day and piece. Read across it shows in each case, for the total hour, day and piece hands, the number which comes under each class of employes. The figures are interesting. Their relation, both ways, can be shown in percentages. For the purposes of analysis this has been done.

The next exhibit gives, separately in each case of males 18 years and over, females 18 years and over, males under 18, females under 18 years, and of the total number employed, the per cent. employed by the hour, day and piece.

Percentage relation of the number of persons, in each sex and age class, who were employed by the hour, day and piece, to the total number in each such sex and age class; also of the total hour, day and piece hands to the total number employed.

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years	Females under 18 years.	Totals.	Males 18 years and over.	Females 18 years and over.	Males under 18 years	Females under 18 years.	Totals.
	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.
By the hour.....	24.03	5.73	22.30	7.78	21.68	25.85	6.48	23.79	11.66	23.26
By the day.....	62.73	41.33	60.78	57.37	60.46	62.59	41.00	58.71	58.15	60.23
By the piece.....	13.22	52.94	16.92	34.85	17.85	11.83	52.52	17.50	30.19	16.51
Total per cent.....	100.00	100.00	100.00	100.00	100.00	100.0	100.00	100.00	100.00	100.00

In many respects the above is a most comprehensive exhibit, one that deserves more careful study than will be given it here. Considering the totals, we may observe the same general tendencies for both years. Of the total number employed, 21.68 per cent. in 1898, and 23.26 per cent. in 1899, were employed by the hour. The proportion employed by the day is much greater, being 60.46 and 60.23 per cent. respectively for the two years. This is the most common form of employment as well as the best known. Even the earnings under other conditions are finally expressed in so much per day. The day is, as a unit, naturally associated with practically all kinds of work. Piece work is practiced, and on a considerable scale. In 1898, 17.86 per cent. of the total, and in 1899, 16.51 per cent. were employed by the piece. This proportion, while smaller than that for hour and day hands, is large enough to receive consideration. It is in vogue mostly in certain industries, such as clothing, where a large part of the work is still done in the homes; and where the work can be readily subdivided.

For male employes, whether over or under 18 years, the percentage to each of the three classes of employment seems approximately to follow those for the totals. There is, of course, a variation of from one to four per cent., but this difference can not be called great or be of much effect. The tendencies for the males is obviously in the same direction. When it comes

to the females, however, the situation changes. Among them the hour hands are relatively few, varying from 5.73 per cent. to 6.48 for those 18 years and over, and from 7.78 per cent. to 11.66 for those under 18 years, in 1898 and 1899 respectively. As compared with the males, this is a falling off for this class of about 18 per cent. The day hands were also relatively fewer among the women, particularly among those over 18 years, where the percentage stood 41.33 and 41.00, as against about 58.00 for those under 18 years, and about 62.00 for the males. In piece hands, on the other hand, the female classes are strong. For those over 18 years the percentage was 52.94 and 52.52 in 1898 and 1899.

For females under 18 years, the per cent. for the two years was 34.85 and 30.19 respectively. For females over 18 the proportion was thus much greater than for those under this age. And for the females, as a whole, the proportion of piece workers was much greater than for males. Now, why should, proportionately, more females than males be employed by the piece? The full answer to this question lies much deeper than any that can be drawn from the facts presented here. The tables show that, in certain industries where female help is largely employed, piece work is also largely the rule. From common experience we know that certain work is more suitable to women. We also know that a high development of machinery, in certain directions has had a tendency to substitute women for men. It is likely that these facts when considered together, might afford an explanation.

The next exhibit gives the respective percentage relation of males and females, over and under 18 years, to the total, in each case, who were employed by the hour, day and piece.

Percentage relation of the number of persons in each sex and age class to the total number in each case who were employed by the hour, day or piece.

CLASSIFICATION.	1898.					1899.				
	Males 16 years and over.	Females 16 years and over.	Males under 16 years.	Females under 16 years.	Totals.	Males 16 years and over.	Females 16 years and over.	Males under 16 years.	Females under 16 years.	Totals.
	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.
By the hour	87.39	2.33	8.94	1.34	100.00	89.03	2.48	7.69	1.82	100.00
By the day	81.69	6.03	8.74	3.52	100.00	83.16	6.00	7.31	3.53	100.00
By the piece	58.29	26.23	2.24	7.24	100.00	57.33	28.05	7.97	6.65	100.00
Totals	78.74	8.85	8.69	3.72	100.00	80.08	8.82	7.51	3.64	100.00

The foregoing exhibits describe so clearly the relation between the number in each wage and age class and the total number of hour, day and piece hands respectively, that there is little to add. For both years the per cent. of the males over 18 years predominates. In hour and day hands they constitute from about 81.00 to about 88.00 per cent. of the total. In the case of piece hands the proportion of males is smaller, while still the largest, the large proportion of females, who were engaged in piece work, reduced the per cent. of males to about 58 per cent. in both years.

Next follows three exhibits which cover the same ground as those given above, except in this, that the age classification has been omitted. The number of persons employed are classified as to sex only. The exhibit first in order, shows the respective number of males, females, and total persons who were employed by the hour, day and piece.

Total male and female persons who were employed by the hour, day and piece.

CLASSIFICATION.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
By the hour.....	17,078	650	17,728	20,073	898	20,971
By the day.....	44,701	4,730	49,441	49,147	5,166	54,313
By the piece.....	9,715	4,887	14,602	9,721	5,166	14,887
Total	71,494	10,267	81,771	78,941	11,230	90,171
Per cent.....	87.44	12.56	100.00	87.55	12.45	100.00

The exhibit gives, in each case, the total number of persons, and furnishes the basis for an analysis. Thus we find that the total persons employed by the hour was 17,728 in 1898, and 20,971 in 1899. Those employed by the day were 49,441, and 54,313; and those by the piece 14,602 and 14,887 respectively, for the two years. This is the total, of both males and females. What is thus shown for both is also shown for each sex. A detailed description, however, is more satisfactory when the figures are expressed in per cent. or in their relation to their totals. For this reason the per cent. was ascertained and given in the following two exhibits:

Per cent. relation of males, females and total to the total number in each case who were employed by the hour, day and piece.

CLASSIFICATION.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
By the hour.....	23.88	6.34	21.68	25.43	7.99	23.26
By the day	62.53	46.07	60.46	62.26	46.01	60.23
By the piece.....	13.59	47.59	17.86	12.31	46.00	16.51
Total	100.00	100.00	100.00	100.00	100.00	100.00

This exhibit covers the two years and expresses in per cent. the figures in the one preceding it. We find from it that of the 71,494 male persons employed in 1898, 23.88 per cent. were employed by the hour, 62.53 per cent. by the day, and 13.59

per cent. by the piece. Of the 78,941 male persons employed in 1899, 25.43 per cent. were employed by the hour, 62.26 per cent. by the day, and 12.31 per cent. by the piece. In the latter year, as compared with the former, there was thus an increase in the number employed by the hour amounting to 1.55 per cent., and a decrease in the day and piece hands amounting in the first case to .27 per cent. and in the latter or piece hands to 1.28 per cent.

The female employes numbered 10,267 in 1898 and 11,230 in 1899. Of the number in the former year 6.34 per cent. were employed by the hour, 46.07 by the day and 47.59 per cent. by the piece. In the latter year 7.99 per cent. were employed by the hour, 46.01 by the day and 46.00 per cent. by the piece.

For females also there was thus an increase in the hour hands. This increase amounted to 1.65 per cent. Day and piece hands, on the other hand, showed a decrease, a decrease that amounted to .6 in the first and 1.59 in the second, of the classes named, thus exactly balancing the increase in hour hands.

The total number of persons employed was 81,771 in 1898 and 90,171 in 1899. For the first in order of these years, we find that 17,728 persons, or 21.68 per cent. were hired by the hour, that 49,441 persons, or 60.46 per cent. were hired by the day, and that 14,602 persons, or 17.86 per cent. were hired by the piece. For 1899 we find that, of the total, the hour hands numbered 20,971 or 23.26 per cent., the day hands 54,313, or 60.23 per cent., and the piece hands 14,887, or 16.51 per cent. For both males and females, when combined, the increases and decreases which were noticed for each when considered alone, are visible. Thus it appears here that there was an increase of 1.58 per cent. in those employed by the hour and a decrease of .23 and 1.35 per cent. respectively, in those working by the day and piece.

One of the chief features in this as in the foregoing exhibits is the large per cent. of the female employes who were employed at piece work. Beyond what has been said, however, no attempt will be made to explain this fact. The increase in day hands at the expense of the other modes of employment is also a prominent feature of the exhibit.

The next exhibit in order is also devoted to percentages. It shows the per cent. of males and females, first of the total number employed by the hour each year; second, of the total number employed by the day; third, of the number employed at piece work.

Per cent. relation of males and females of the total hour, day and piece hands.

CLASSIFICATION.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
By the hour.....	96.33	3.67	100.00	95.71	4.29	100.00
By the day	90.42	9.58	100.00	90.49	9.51	100.00
By the piece.....	66.53	33.47	100.00	65.29	34.71	100.00
Total.....	87.44	12.56	100.00	87.55	12.45	100.00

We see here that in 1898 of the 17,728 persons employed by the hour 96.33 per cent. were males and 3.67 per cent. were females; that in 1899, of the 20,971 persons employed, 95.71 per cent. were males and 4.29 per cent. were females. In the hour hands there was thus a slight increase in females for the latter year.

Of the 49,441 persons employed by the day in 1898, 92.42 per cent. were males and 9.58 per cent. females. Of the 54,313 thus employed in 1899, 90.49 per cent. were males and 9.51 per cent. females. For the day hands there was thus hardly any change in the per cent. of male and female employees.

In 1898, 14,602 persons, and in 1899, 14,887 persons were employed at piece work. Of the number in the former year 66.53 per cent. were males and 33.47 per cent. females. In the latter year 65.29 per cent. were males and 34.71 per cent. females. In the latter year there is thus a small increase in the per cent. of females employed by the piece.

The foregoing analysis under this head is devoted mainly to the number of persons of each sex and who were employed under each of the three modes of employment. Considerable space has been given to this. In the first place the data is varied

and the classifications quite numerous. This of itself necessitates many exhibits and a great deal of description. Then again the facts under this head are far reaching in their effect and therefore should be given in detail. The remaining part under this head will be devoted to the number of hour, day and piece hands in each industry in 1898 and 1899, and to the increase and decrease, as the case may be, in 1899, as compared with 1898. These facts are found in the two succeeding tables, and, together with what has been shown already, constitute a fairly complete illustration of the subject.

*Persons employed by the hour, day or piece, by industries, in 1898
and 1899.*

By Industries, in 1898 and 1899.

INDUSTRIES.	No. of establishments.	1898.				1899.			
		Hour.	Day.	Piece.	Totals.	Hour.	Day.	Piece.	Totals.
Agricultural implements	26	402	1,718	969	3,089	345	1,793	1,192	3,330
Artisans' tools and hardware specialties	9	524	103	322	949	563	102	396	1,061
Bicycles, tricycles, etc.	10	502	299	559	1,360	58	428	348	834
Boots and shoes	22	242	1,545	663	2,460	360	1,199	676	2,236
Boxes (wooden and paper)	27	428	671	490	1,549	535	654	465	1,654
Brick, tile and sewer pipe.	23	114	581	22	717	149	522	31	702
Brooms, brushes and baskets.	16	14	93	98	216	29	99	111	239
Burial cases, caskets, coffins, etc.	3	103	224	327	654	336	21	357	699
Cement, lime, plaster, etc.	9	26	325	2	366	250	266	22	538
Chairs	10	312	2,811	251	3,474	1,023	2,339	175	3,537
Cigars, snuff and tobacco.	50	436	699	1,045	2,180	21	418	719	1,158
Clothing	13	176	719	1,961	2,841	75	515	2,278	2,868
Confectioneries, crackers, etc.	12	1,171	1,171	1,171	3,513	184	1,161	25	1,370
Cooking and heating apparatus	5	406	213	539	1,158	339	214	612	1,165
CoupePage	15	68	105	470	613	124	65	407	596
Cotton and linen goods.	6	7	126	352	485	30	132	324	486
Electrical and gas apparatus and supplies	17	285	856	62	1,203	527	650	70	1,247
Flour and feed	65	69	1,017	4	1,090	12	955	2	969
Furniture	38	600	1,856	417	2,873	820	1,463	339	3,017
Furs, gloves and mittens.	9	34	55	130	219	37	24	163	224
Iron goods (malleable)	24	2,080	1,738	898	4,716	2,606	1,839	1,172	5,617
Knit goods	16	171	747	1,274	2,192	170	1,032	1,373	2,575
Lager beer	57	70	3,023	3,093	6,163	27	3,236	12	3,275
Leather	25	1,242	2,338	888	4,468	1,488	2,701	625	4,814
Lumber, lath and shingles.	124	1,651	13,362	218	15,231	1,181	17,424	206	18,811
Malt	16	7	539	546	60	486	546	546	546
Machines and machinery.	84	3,587	1,584	492	5,663	4,777	1,827	487	7,091
Office and saloon fixtures.	7	442	24	102	568	483	73	15	571
Paints, oils and crude chemicals	5	22	84	106	25	97	122	122	122
Paper and pulp	31	114	3,063	178	3,355	832	2,946	303	3,631
Saddlery, harness, etc.	8	8	134	119	261	132	154	286	572
Sash, doors, blinds, etc.	58	1,873	1,440	37	3,350	2,177	1,532	52	3,761
Sheet metal goods	23	273	1,594	326	2,193	340	1,877	102	2,319
Ship and boat building.	6	308	412	210	1,430	742	449	150	1,341
Soap, lye and potash.	8	619	92	21	714	83	91	22	196
Staves and heading	15	50	431	20	501	48	419	12	479
Stone (marble, granite, etc.) ..	9	157	35	192	208	47	1	256	256
Toys and games	5	360	42	402	366	61	386	386	386
Trunks, valises, etc.	6	73	170	95	339	95	155	125	375
Veneer	7	23	342	60	425	453	81	534	614
Wagons, carriages and sleighs ..	39	632	1,091	1,054	2,777	478	1,556	950	2,984
Woodenware	8	1,167	343	1,510	1,240	290	1,530	1,530	1,530
Woolen and worsted goods.	16	72	648	355	1,075	120	581	319	1,020
All Industries	902	17,728	49,441	14,602	81,771	20,971	54,313	14,887	90,171

Increase and decrease in the hour, day and piece hands, by industries, in 1898 and 1899.

INDUSTRIES.	No. of establishments	INCREASE (+), DECREASE (-) IN THE HOUR, DAY, AND PIECE HANDS IN 1899, AS COMPARED WITH 1898.			
		Hour.	Day.	Piece.	Totals.
Agricultural implements.....	26	- 57	+ 75	+ 223	+ 241
Artisans' tools and hardware specialties.....	9	+ 39	- 1	+ 74	+ 112
Bicycles, tricycles, etc.....	10	- 444	+ 129	- 211	- 525
Boots and shoes.....	22	+ 118	- 346	+ 14	- 214
Boxes (wooden and paper).....	27	+ 107	- 17	+ 15	+ 105
Brick, tile and sewer pipe.....	23	+ 35	- 59	- 9	- 33
Brooms, brushes and baskets.....	16	+ 15	- 6	+ 13	+ 22
Burial cases, caskets, coffins, etc.....	3	- 168	+ 112	+ 21	- 35
Cement, lime, plaster, etc.....	9	+ 224	- 62	+ 30	+ 192
Chairs.....	10	+ 711	- 572	- 76	+ 63
Cigars, snuff and tobacco.....	50	+ 21	- 18	+ 109	+ 112
Clothing.....	13	- 101	- 199	+ 327	+ 27
Confectioneries, crackers, etc.....	12	+ 184	- 10	+ 35	+ 199
Cooking and heating apparatus.....	15	- 67	+ 1	+ 73	+ 7
Cooperage.....	5	+ 55	- 40	- 63	- 47
Cotton and linen goods.....	6	+ 23	+ 6	- 28	+ 1
Electrical and gas apparatus and supplies.....	17	+ 242	- 206	+ 8	+ 44
Flour and feed.....	65	- 57	- 62	- 2	- 121
Furniture.....	38	+ 220	+ 2	- 78	+ 144
Furs, gloves and mittens.....	9	+ 3	- 31	+ 33	+ 5
Iron goods (malleable).....	24	+ 526	+ 155	+ 274	+ 955
Knit goods.....	16	- 1	+ 235	+ 99	+ 333
Lager beer.....	51	- 43	+ 213	+ 12	+ 182
Leather.....	25	+ 246	+ 363	- 263	+ 346
Lumber, lath and shingles.....	124	- 470	+ 4,062	- 12	+ 3,680
Malt.....	16	+ 53	- 53	-	-
Machines and machinery.....	84	+ 1,190	+ 243	- 5	+ 1,428
Office and saloon fixtures, etc.....	7	+ 41	- 49	- 87	- 95
Paints, oils and crude chemicals.....	5	+ 3	+ 13	-	+ 16
Paper and pulp.....	31	+ 268	- 117	+ 125	+ 276
Saddlery, harness, etc.....	8	- 8	- 2	+ 35	+ 25
Sash, doors, blinds, etc.....	18	+ 304	+ 92	+ 15	+ 411
Sheet metal goods.....	23	+ 47	+ 283	- 224	+ 126
Ship and boat building.....	5	- 66	- 37	- 60	- 163
Soap, lye and potash.....	8	+ 22	- 1	+ 1	+ 22
Staves and heading.....	15	- 2	- 12	- 8	- 22
Stone (marble, granite, etc.).....	9	+ 51	+ 12	+ 1	+ 64
Toys and games.....	5	-	- 25	+ 19	- 6
Trunks, valises, etc.....	6	+ 22	- 15	+ 30	+ 37
Veneer.....	7	- 23	+ 111	+ 21	+ 109
Wagons, carriages and sleighs.....	39	- 154	+ 465	- 104	+ 207
Woodenware.....	8	-	+ 73	- 53	+ 20
Woolen and worsted goods.....	16	+ 48	- 17	- 36	+ 5
All industries.....	992	+ 3,243	+ 4,872	+ 286	+ 10,27

In this connection it is interesting to know just how many persons in each industry are employed by the hour, how many are employed by the day, and how many work by the piece. It is also interesting to know what changes took place during the period, covered in the number thus employed. These facts are readily ascertained. They are contained in the first table presented under this head. And for the purpose of comparison and analysis have been given again, the two tables which precedes these explanations.

The mode of hiring labor is worth noticing. Looking over the foregoing tables we find how this is done. Of the three modes of employment mentioned, all seem to be, to a greater or less extent, in vogue or practice in practically all industries. There are a few exceptions. Thus we find four industries where no one was employed by the hour, and six where no one was employed by the piece, in 1898. In 1899 five industries had no hour and two no piece hands. Outside of these, however, there is a pretty general distribution among all the ways of hiring.

As we have seen, many changes took place in the total number employed as between the two years. These changes were also accompanied by changes in the number employed under each mode of employment. Thus in the second table in order employed by the hour, fourteen industries showed a decrease and sixteen an increase, while three give no change. In those employed by the day, twenty-two gave an increase and twenty-one industries gave a decrease. Coming to piece workers there is an increase in twenty-five industries, a decrease in sixteen, and no change in two. The changes in the totals have already been explained.

This exhibit gives the respective number of hour, day and piece hands in 1898 and 1899, and the increase in 1899 as compared with 1898.

CLASSIFICATION.	Total persons in 1898.	Total persons in 1899.	INCREASE IN 1899.	
			Number.	Per cent.
By the hour	17,728	20,971	3,243	18.29
By the day.....	49,441	54,313	4,872	9.85
By the piece.....	14,802	14,887	285	1.95
Totals.....	81,771	90,171	8,400	10.27

From this exhibit it is plain that in 1899 as compared with 1898, the number employed by the hour increased from 17,728 to 20,971, a gain of 3,243 persons, or 18.29 per cent.

That the number of persons employed by the day increased from 49,441 to 54,313, a gain of 4,872 persons, or 9.85 per cent.

That those employed at piece work increased from 14,602 to 14,887, a gain of 285 persons, or 1.95 per cent.

The total greatest number of persons employed increased, as has already been explained, from 81,771 to 90,171, a gain of 8,400 persons, or 10.27 per cent.

Classified weekly earnings, by industries.

AGRICULTURAL IMPLEMENTS.

(26 establishments.)

WEEKLY EARNINGS.	1898.						1899.					
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.		Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	
\$25.00 per wk. and over.	17				17		21				21	
20.00 but under \$25.00	29				29		29				29	
18.00 but under 20.00	47				47		68				68	
15.00 but under 18.00	167				167		202				202	
13.00 but under 15.00	208				208		197				197	
12.00 but under 13.00	377				377		381				381	
11.00 but under 12.00	77				77		245				245	
10.00 but under 11.00	345				345		237				237	
9.00 but under 10.00	606				606		422				422	
8.00 but under 9.00	264				264		369				369	
7.00 but under 8.00	519				519		566		1		567	
6.00 but under 7.00	154		21		175		335				335	
5.50 but under 6.00	51		7		58		12				12	
5.00 but under 5.50	24		7		31		24				31	
4.50 but under 5.00	27		26		53		69		37		106	
4.00 but under 4.50			25		25		10		9		19	
3.50 but under 4.00			30		30		14		15		29	
3.00 but under 3.50		4	44		48		20		29		49	
2.50 but under 3.00			9		9		6	2			10	
2.00 but under 2.50			4		4							
1.50 but under 2.00									1		1	
Under \$1.50												
Aggregates	2,912	4	173		3,089		3,227	2	101		3,330	
Percentages	94.27	0.13	5.60		100.00		96.90	0.06	3.04		100.00	

ARTISANS' TOOLS AND HARDWARE SPECIALTIES.

(9 establishments.)

\$25.00 per wk. and over.	4				4		1				1	
20.00 but under \$25.00	6				6		12				12	
18.00 but under 20.00	13				13		12				12	
15.00 but under 18.00	78				78		53				53	
13.00 but under 15.00	42				42		64				64	
12.00 but under 13.00	32				32		64				64	
11.00 but under 12.00	24				24		40				40	
10.00 but under 11.00	35				35		61				61	
9.00 but under 10.00	65				65		103				103	
8.00 but under 9.00	59				59		79				79	
7.00 but under 8.00	166				166		83				83	
6.00 but under 7.00	174				174		125				125	
5.50 but under 6.00	32				32		41	1			42	
5.00 but under 5.50	33		2		35		50	2			52	
4.50 but under 5.00	55		4		57		49	3			53	
4.00 but under 4.50			24		24		20		1		27	
3.50 but under 4.00			22		22		42		4		46	
3.00 but under 3.50			30		30			1	24		25	
2.50 but under 3.00			21		21				33		33	
2.00 but under 2.50			17		17				27		27	
1.50 but under 2.00			13		13				33		33	
Under \$1.50									26		26	
Aggregates	816		133		949		899	7	155		1,061	
Percentages	85.98		14.02		100.00		84.73	0.66	14.61		100.00	

Classified weekly earnings, by industries—continued.

BICYCLES, TRICYCLES, ETC.

(10 establishments.)

WEEKLY EARNINGS	1898.						1899.					
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.		Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	
\$25.00 per wk. and over.	29				29		6				6	
20.00 but under \$25.00.	70				70		38				38	
18.00 but under 20.00.	107				107		43				43	
15.00 but under 18.00.	107				107		69				69	
13.00 but under 15.00.	98				98		61				61	
12.00 but under 13.00.	102				102		37				37	
11.00 but under 12.00.	77				77		37				37	
10.00 but under 11.00.	87				87		76				76	
9.00 but under 10.00.	147				147		88				88	
8.00 but under 9.00.	106				106		77		1		78	
7.00 but under 8.00.	139		6		145		70		2		72	
6.00 but under 7.00.	108		9		117		59		3		62	
5.50 but under 6.00.	39		3		42		54		6		60	
5.00 but under 5.50.	51		15		66		35		10		45	
4.50 but under 5.00.	9		30		39		8		5		13	
4.00 but under 4.50.			11		11				22		22	
3.50 but under 4.00.			14		14				11		11	
3.00 but under 3.50.			9		9				10		10	
2.50 but under 3.00.			4		4				4		4	
2.00 but under 2.50.			1		1				4		4	
1.50 but under 2.00.			1		1							
Under \$1.50			1		1							
Aggregates	1,256		104		1,360		756		78		834	
Percentages	92.36		7.64		100.00		90.65		9.35		100.00	

BOOTS AND SHOES.

(22 establishments.)

\$25.00 per wk. and over.	16				16	17					17	
20.00 but under \$25.00.	37				37	38					38	
18.00 but under 20.00.	41				41	42	1				43	
15.00 but under 18.00.	91				91	88	1				89	
13.00 but under 15.00.	56				56	76	5				81	
12.00 but under 13.00.	82				82	85	7				92	
11.00 but under 12.00.	64	26			90	110	4				114	
10.00 but under 11.00.	96	23			119	85	16				101	
9.00 but under 10.00.	184	22			206	178	40				223	
8.00 but under 9.00.	111	34			145	118	37	13			168	
7.00 but under 8.00.	121	45	8	2	176	83	51	6		6	146	
6.00 but under 7.00.	103	85	5		193	96	95	11			202	
5.50 but under 6.00.	16	54			70	23	78	4			106	
5.00 but under 5.50.	42	97	1		140	22	103	4			129	
4.50 but under 5.00.	12	80	18	3	113	4	91	38	7		140	
4.00 but under 4.50.	22	46	45	12	125	11	40	43	2		96	
3.50 but under 4.00.	6	40	25	26	97	7	30	39	51		127	
3.00 but under 3.50.		21	430	48	499	3	27	63	60		153	
2.50 but under 3.00.			19	40	59		9	21	64		94	
2.00 but under 2.50.			7	58	79		3	19	48		70	
1.50 but under 2.00.			21	7	14		1	5	1		7	
Under \$1.50				2	2							
Aggregates	1,100	573	579	198	2,450	1,086	639	271	280		2,236	
Percentages	44.89	23.39	23.63	8.09	100.00	48.89	28.59	12.13	10.69		100.00	

Classified weekly earnings, by industries—continued.

BOXES (WOODEN AND PAPER).

(27 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	5	.....	.....	.....	5	8	.....	.....	.....	8
20.00 but under \$25.00	5	.....	.....	.....	5	6	.....	.....	.....	6
18.00 but under 20.00	10	.....	.....	.....	10	10	.....	.....	.....	10
15.00 but under 18.00	24	.....	.....	.....	24	21	.....	.....	.....	21
13.00 but under 15.00	19	.....	.....	.....	19	19	.....	.....	.....	19
12.00 but under 13.00	42	.....	.....	.....	42	45	.....	.....	.....	45
11.00 but under 12.00	34	.....	.....	.....	34	42	1	.....	.....	43
10.00 but under 11.00	53	1	.....	.....	54	65	.....	.....	.....	65
9.00 but under 10.00	111	.....	.....	.....	111	124	.....	5	.....	129
8.00 but under 9.00	105	.....	2	.....	107	90	.....	13	.....	103
7.00 but under 8.00	104	.....	4	.....	108	183	17	7	.....	207
6.00 but under 7.00	173	61	2	.....	256	134	52	.....	.....	192
5.50 but under 6.00	42	36	4	.....	82	23	26	5	.....	56
5.00 but under 5.50	24	14	5	.....	43	23	12	8	13	56
4.50 but under 5.00	34	36	16	4	90	29	43	.....	13	117
4.00 but under 4.50	20	53	27	32	132	7	.....	29	19	55
3.50 but under 4.00	.....	18	26	20	64	.....	37	69	30	136
3.00 but under 3.50	.....	24	117	37	178	38	97	97	40	273
2.50 but under 3.00	.....	22	53	47	122	.....	8	37	40	85
2.00 but under 2.50	.....	.....	21	13	34	.....	.....	9	17	26
1.50 but under 2.00	.....	.....	11	16	27	.....	.....	.....	3	3
Under \$1.50	.....	.....	2	.....	2	.....	.....	.....	.....	.....
Aggregates	805	285	290	169	1,549	867	293	317	177	1,654
Percentages	51.97	18.40	18.72	10.91	100.00	52.42	17.72	19.16	10.70	100.00

BRICK, TILE AND SEWER PIPE.

(23 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	1	.....	.....	.....	1	1	.....	.....	.....	1
20.00 but under \$25.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18.00 but under 20.00	2	.....	.....	.....	2	5	.....	.....	.....	5
15.00 but under 18.00	3	.....	.....	.....	3	4	.....	.....	.....	4
13.00 but under 15.00	1	.....	.....	.....	1	3	.....	.....	.....	3
12.00 but under 13.00	13	.....	.....	.....	13	16	.....	.....	.....	16
11.00 but under 12.00	.....	.....	.....	.....	.....	5	.....	.....	.....	5
10.00 but under 11.00	26	.....	.....	.....	26	38	.....	.....	.....	38
9.00 but under 10.00	100	.....	.....	.....	100	176	.....	.....	.....	176
8.00 but under 9.00	191	.....	.....	.....	191	204	.....	.....	.....	204
7.00 but under 8.00	224	.....	.....	.....	224	125	1	.....	.....	127
6.00 but under 7.00	66	.....	.....	.....	71	34	.....	20	.....	54
5.50 but under 6.00	.....	.....	1	.....	1	.....	.....	.....	.....	.....
5.00 but under 5.50	.....	.....	4	.....	4	.....	.....	.....	.....	.....
4.50 but under 5.00	11	.....	.....	.....	21	.....	.....	22	.....	22
4.00 but under 4.50	.....	.....	2	.....	2	5	.....	.....	.....	12
3.50 but under 4.00	1	.....	9	.....	10	.....	.....	3	.....	3
3.00 but under 3.50	.....	.....	33	.....	33	.....	.....	20	.....	20
2.50 but under 3.00	.....	.....	.....	.....	.....	.....	.....	4	.....	4
2.00 but under 2.50	.....	.....	4	.....	4	.....	.....	.....	.....	.....
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aggregates	619	.....	68	.....	717	617	1	84	.....	702
Percentages	90.51	.....	9.49	.....	100.00	87.89	0.15	11.96	.....	100.00

Classified weekly earnings, by industries—continued.

BROOMS, BRUSHES, AND BASKETS.

(16 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 15 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 15 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.										
20.00 but under 25.00	1				1					2
18.00 but under 20.00						2				
15.00 but under 18.00	1				1					7
12.00 but under 15.00	2				2	7				9
12.00 but under 13.00	5				5	8	1			11
11.00 but under 12.00	8				8	11				18
10.00 but under 11.00	9				9	18				35
9.00 but under 10.00	29				29	33		2		24
8.00 but under 9.00	40	1			41	22		2		39
7.00 but under 8.00	31		2		33	32		7		43
6.00 but under 7.00	36				36	41		2		7
5.50 but under 6.00	1		4		5	3		4		9
5.00 but under 5.50		2	1		3	2	4	3		14
4.50 but under 5.00	4	1			5	3		11		2
4.00 but under 4.50	6				6			2		9
3.50 but under 4.00			1		1			2		2
3.00 but under 3.50			4		4			2		3
2.50 but under 3.00			13	2	15			3		3
2.00 but under 2.50				1	1			2		3
1.50 but under 2.00						1		2		
Under \$1.50										
Aggregates	173	4	25	3	205	183	5	51		239
Percentages	84.39	1.95	12.20	1.46	100.00	76.58	2.09	21.33		100.00

BURIAL CASES, CASKETS, COFFINS, ETC.

(3 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 15 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 15 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	2				2					
20.00 but under 25.00										
18.00 but under 20.00										11
15.00 but under 18.00	4				4	11				9
13.00 but under 15.00	9				9	9				13
12.00 but under 13.00	14				14	13				15
11.00 but under 12.00	5				5	14	1			53
10.00 but under 11.00	9	1			10	14				28
9.00 but under 10.00	53				53	53				76
8.00 but under 9.00	25				25	28				36
7.00 but under 8.00	59	1			59	70				1
6.00 but under 7.00	30	4			34	82	4			18
5.50 but under 6.00	1	7			8		1			16
5.00 but under 5.50	8	3			11	7	11			13
4.50 but under 5.00	7	6			13	6	9		1	14
4.00 but under 4.50	9	9			18	4	13		1	30
3.50 but under 4.00	9	3			12	2	10	9	5	1
3.00 but under 3.50		25	13		38	2	4	12	12	5
2.50 but under 3.00			7	6	13				1	6
2.00 but under 2.50			1	6	7				5	
1.50 but under 2.00										
Under \$1.50										
Aggregates	235	59	21	12	327	258	53	21	25	357
Percentages	71.87	18.04	6.44	3.66	100.00	72.27	14.85	5.88	7.00	100.00

Classified weekly earnings, by industries—continued.

CEMENT, LIME, PLASTER, ETC.

(9 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	1				1	1				1
20.00 but under \$25.00.	1				1	2				3
18.00 but under 20.00.	2				2	3				5
15.00 but under 18.00.	1				1	1				2
13.00 but under 15.00.	8				8	12				12
12.00 but under 13.00.						11				11
11.00 but under 12.00.	10				10	18				18
10.00 but under 11.00.	3				3	35				35
9.00 but under 10.00.	90				90	111				111
8.00 but under 9.00.	43				43	66				66
7.00 but under 8.00.	112				112	136				136
6.00 but under 7.00.	6				6	1				1
5.50 but under 6.00.	44				44	1				1
5.00 but under 5.50.						2				2
4.50 but under 5.00.	19				19	1				1
4.00 but under 4.50.						19				19
3.50 but under 4.00.	2				2					
3.00 but under 3.50.										
2.50 but under 3.00.	1				1					
2.00 but under 2.50.										
1.50 but under 2.00.	1		12		13					
Under \$1.50										
Aggregates	340	4	12		356	461	26	37	24	533
Percentages	95.51	1.12	3.37		100.00	83.83	4.83	6.88	4.46	100.00

CHAIRS.

(10 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	7				7	2				2
20.00 but under \$25.00.	16				16	10				10
18.00 but under 20.00.	24				24	20				20
15.00 but under 18.00.	15				15	22				22
13.00 but under 15.00.	43				43	36				36
12.00 but under 13.00.	23				23	41				41
11.00 but under 12.00.	99				99	79				79
10.00 but under 11.00.	40				41	103				103
9.00 but under 10.00.	95				95	146				146
8.00 but under 9.00.	209				209	170				170
7.00 but under 8.00.	541				541	641				641
6.00 but under 7.00.	1,190	7			1,208	1,336	2			1,338
5.50 but under 6.00.	175	10			243	139				155
5.00 but under 5.50.	160	13			212	34				84
4.50 but under 5.00.	22	28			123	6				137
4.00 but under 4.50.	11	9			43	86				62
3.50 but under 4.00.		53			185	56				167
3.00 but under 3.50.		14			150	10				134
2.50 but under 3.00.					70					70
2.00 but under 2.50.					46					51
1.50 but under 2.00.					5					9
Under \$1.50										
Aggregates	2,671	135	500	168	3,474	2,819	131	456	131	3,537
Percentages	76.89	3.88	14.39	4.84	100.00	79.71	3.70	12.89	3.70	100.00

Classified weekly earnings, by industries—continued.

CIGARS, SNUFF AND TOBACCO.

(50 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	6				6	8				8
20.00 but under \$25.00.	6				6	8				8
18.00 but under 20.00.	13				13	17				17
15.00 but under 18.00.	45				45	45				45
13.00 but under 15.00.	62	4			66	68				68
12.00 but under 13.00.	60	2			62	63				63
11.00 but under 12.00.	85	5	4		94	60	3			63
10.00 but under 11.00.	50	5	3		58	177				177
9.00 but under 10.00.	99	6	2	2	109	106	13			119
8.00 but under 9.00.	74	20	21	4	119	56	21			77
7.00 but under 8.00.	43	20	4		67	34	13			47
6.00 but under 7.00.	35	25	8	2	70	52	32	6		90
5.50 but under 6.00.	5	19	3	4	31	15	23			38
5.00 but under 5.50.	5	8	6	5	24	9	10	1	2	22
4.50 but under 5.00.	3	11	4	5	23	1	4	6		21
4.00 but under 4.50.	3	6	11	6	26	7	3	21	11	42
3.50 but under 4.00.		8	1	10	19	4	9	23	22	58
3.00 but under 3.50.		3	25	40	68	3	46	28	22	94
2.50 but under 3.00.			20	62	82		4	22	4	30
2.00 but under 2.50.			12	30	42		6	25	34	65
1.50 but under 2.00.			7	8	15			5		5
Under \$1.50							1			1
Aggregates	594	142	131	178	1,045	733	187	133	105	1,157
Percentages	56.84	13.59	12.53	17.04	100.00	63.85	16.29	10.72	9.14	100.00

CLOTHING.

(23 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	31				31	33				33
20.00 but under \$25.00.	27				27	49	1			50
18.00 but under 20.00.	31				31	24				24
15.00 but under 18.00.	35				35	34	1			35
13.00 but under 15.00.	14				14	22				22
12.00 but under 13.00.	32	2			34	44	3			47
11.00 but under 12.00.	9	21			30	29	29			58
10.00 but under 11.00.	30	14			44	27	13			40
9.00 but under 10.00.	42	23			65	18	39			57
8.00 but under 9.00.	14	98			112	12	86			97
7.00 but under 8.00.	9	55			64	34	139		6	178
6.00 but under 7.00.	17	180			197	10	162			172
5.50 but under 6.00.	3	347			350	14	209	2		225
5.00 but under 5.50.	12	695	1		708	6	623		3	632
4.50 but under 5.00.	2	242			244	7	247	3	27	284
4.00 but under 4.50.	2	197	2	7	208		114	3	12	129
3.50 but under 4.00.	2	269	10	9	290		284	9	28	321
3.00 but under 3.50.	1	108	7	53	169		198	4	29	231
2.50 but under 3.00.		28	9	51	88		75	4	40	119
2.00 but under 2.50.		5	3	46	54		32	4	50	86
1.50 but under 2.00.				33	33		5	2	15	22
Under \$1.50				9	9		5		1	6
Aggregates	312	2,288	32	208	2,841	363	2,263	31	211	2,968
Percentages	11.02	80.53	1.13	7.32	100.00	12.67	78.90	1.06	7.35	100.00

Classified weekly earnings, by industries—continued.

CONFECTIONERIES, CRACKERS, ETC.

(12 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	9	.....	.....	.....	9	24	.....	.....	.....	2
20.00 but under \$25.00	6	.....	.....	.....	6	9	.....	.....	.....	8
18.00 but under 20.00	9	.....	.....	.....	9	12	.....	.....	.....	12
15.00 but under 18.00	18	.....	.....	.....	18	18	.....	.....	.....	18
13.00 but under 15.00	20	.....	.....	.....	20	19	.....	.....	.....	19
12.00 but under 13.00	27	.....	.....	.....	27	34	.....	.....	.....	34
11.00 but under 12.00	12	.....	.....	.....	12	12	.....	.....	.....	12
10.00 but under 11.00	29	.....	.....	.....	29	30	.....	.....	.....	30
9.00 but under 10.00	33	.....	.....	.....	34	39	.....	.....	.....	39
8.00 but under 9.00	11	.....	.....	.....	11	31	.....	.....	.....	31
7.00 but under 8.00	27	.....	.....	.....	28	35	.....	.....	.....	39
6.00 but under 7.00	18	.....	.....	.....	20	30	.....	.....	.....	38
5.50 but under 6.00	6	.....	.....	.....	11	8	.....	.....	.....	19
5.00 but under 5.50	20	.....	.....	.....	23	18	.....	.....	.....	32
4.50 but under 5.00	12	.....	.....	.....	34	11	.....	.....	.....	43
4.00 but under 4.50	20	.....	.....	.....	27	13	.....	.....	.....	82
3.50 but under 4.00	15	.....	.....	.....	95	12	.....	.....	.....	129
3.00 but under 3.50	4	.....	.....	.....	17	4	.....	.....	.....	276
2.50 but under 3.00	.....	.....	.....	.....	194	.....	.....	.....	.....	296
2.00 but under 2.50	.....	.....	.....	.....	177	.....	.....	.....	.....	148
1.50 but under 2.00	.....	.....	.....	.....	162	.....	.....	.....	.....	126
Under \$1.50	.....	.....	.....	.....	3	.....	.....	.....	.....	5
Aggregates	296	266	213	396	1,171	337	333	170	530	1,370
Percentages	25.29	22.71	18.19	33.81	100.00	24.60	24.30	12.41	38.69	100.00

COOKING AND HEATING APPARATUS.

(5 establishments.)

\$25.00 per wk. and over.	11	.....	.....	.....	11	11	.....	.....	.....	11
20.00 but under \$25.00	24	.....	.....	.....	24	25	.....	.....	.....	25
18.00 but under 20.00	30	.....	.....	.....	30	34	.....	.....	.....	34
15.00 but under 18.00	120	.....	.....	.....	120	130	.....	.....	.....	130
13.00 but under 15.00	92	.....	.....	.....	92	107	.....	.....	.....	107
12.00 but under 13.00	73	.....	.....	.....	73	82	.....	.....	.....	82
11.00 but under 12.00	30	.....	.....	.....	30	13	.....	.....	.....	13
10.00 but under 11.00	60	.....	.....	.....	60	75	.....	.....	.....	75
9.00 but under 10.00	146	.....	.....	.....	146	136	.....	.....	.....	136
8.00 but under 9.00	113	.....	.....	.....	113	161	.....	.....	.....	131
7.00 but under 8.00	71	.....	.....	.....	74	56	.....	.....	.....	56
6.00 but under 7.00	54	.....	.....	.....	54	40	.....	.....	.....	40
5.50 but under 6.00	11	.....	.....	.....	11	15	.....	.....	.....	15
5.00 but under 5.50	17	.....	.....	.....	44	11	.....	.....	.....	37
4.50 but under 5.00	.....	.....	.....	.....	18	5	.....	.....	.....	17
4.00 but under 4.50	.....	.....	.....	.....	21	.....	.....	.....	.....	28
3.50 but under 4.00	.....	.....	.....	.....	62	.....	.....	.....	.....	59
3.00 but under 3.50	.....	.....	.....	.....	70	.....	.....	.....	.....	40
2.50 but under 3.00	.....	.....	.....	.....	51	.....	.....	.....	.....	81
2.00 but under 2.50	.....	.....	.....	.....	54	.....	.....	.....	.....	50
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aggregates	852	3	303	.....	1,158	871	3	291	.....	1,165
Percentages	73.58	0.26	26.16	.....	100.00	74.76	0.25	24.99	.....	100.00

Classified weekly earnings, by industries—continued.

COOPERAGE.

(15 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	3				3	1				1
20.00 but under \$25.00	8				8	2				2
18.00 but under 20.00	10				10	23				33
15.00 but under 18.00	43				43	71				71
13.00 but under 15.00	49				49	13				13
12.00 but under 13.00	43				43	50		5		55
11.00 but under 12.00	39				39	31				32
10.00 but under 11.00	43				43	54	1	1		56
9.00 but under 10.00	141				141	148		4		152
8.00 but under 9.00	64				64	40				40
7.00 but under 8.00	56		1		57	43		9		52
6.00 but under 7.00	54		1		55	27		6		33
5.50 but under 6.00	14				14	15		9		24
5.00 but under 5.50	15		2		17	10		8		18
4.50 but under 5.00	4		9		13	4		6		10
4.00 but under 4.50	8		11		19					
3.50 but under 4.00	1		10		11			1		1
3.00 but under 3.50	4		5		9					
2.50 but under 3.00			5		5			3		3
2.00 but under 2.50										
1.50 but under 2.00										
Under \$1.50										
Aggregates	599		44		643	543	1	52		596
Percentages	93.16		6.84		100.00	91.11	0.17	8.72		100.00

COTTON AND LINEN GOODS.

(6 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	1				1					
20.00 but under \$25.00										
18.00 but under 20.00	1				1	4				4
16.00 but under 18.00	7				7	3				3
13.00 but under 15.00	3				3	7				7
12.00 but under 13.00	3				3	8				8
11.00 but under 12.00	3				3	5				5
10.00 but under 11.00	6	1			7	8	1			9
9.00 but under 10.00	7				7	16				16
8.00 but under 9.00	19	4			23	13	5			18
7.00 but under 8.00	6	12			18	21	14			35
6.00 but under 7.00	32	44			76	17	41			58
5.50 but under 6.00	20	18			38	15	24			39
5.00 but under 5.50	13	17	1		31	18	23			39
4.50 but under 5.00	20	39	4	4	67	9	18	2	1	30
4.00 but under 4.50	17	40	13	12	82	10	69	18	30	127
3.50 but under 4.00	11	26	10	10	57	3	5	6	5	19
3.00 but under 3.50		8	12	12	32	6	22	6	7	41
2.50 but under 3.00			10	18	28		16	7	5	28
2.00 but under 2.50			1		1					
1.50 but under 2.00										
Under \$1.50										
Aggregates	169	209	51	56	485	161	238	39	48	486
Percentages	34.36	43.09	10.51	11.55	100.00	33.12	48.99	8.02	9.87	100.00

Classified weekly earnings, by industries—continued.

ELECTRICAL AND GAS APPARATUS AND SUPPLIES.

(17 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	8	.....	.....	.....	8	7	.....	.....	.....	7
20.00 but under \$25.00	19	.....	.....	.....	19	25	.....	.....	.....	25
18.00 but under 20.00	38	.....	.....	.....	38	33	.....	.....	.....	33
15.00 but under 18.00	75	.....	.....	.....	75	93	.....	.....	.....	93
12.00 but under 15.00	88	.....	.....	.....	88	97	.....	.....	.....	97
12.00 but under 13.00	100	.....	.....	.....	100	104	.....	.....	.....	104
11.00 but under 12.00	49	.....	.....	.....	49	46	.....	.....	.....	46
10.00 but under 11.00	122	.....	.....	.....	122	137	.....	.....	.....	137
9.00 but under 10.00	203	.....	.....	.....	203	169	.....	.....	.....	169
8.00 but under 9.00	48	.....	.....	.....	48	57	1	.....	.....	58
7.00 but under 8.00	88	.....	.....	.....	88	149	.....	.....	.....	149
6.00 but under 7.00	65	2	5	.....	72	50	2	1	.....	53
5.50 but under 6.00	24	1	2	.....	27	14	1	.....	.....	15
5.00 but under 5.50	27	2	3	.....	32	18	1	11	.....	30
4.50 but under 5.00	11	9	4	.....	24	13	21	13	.....	47
4.00 but under 4.50	15	15	23	.....	53	12	6	21	.....	39
3.50 but under 4.00	10	8	25	.....	43	19	7	40	.....	68
3.00 but under 3.50	8	4	41	2	55	4	2	41	.....	54
2.50 but under 3.00	3	5	39	4	51	5	4	.....	.....	14
2.00 but under 2.50	.....	2	4	10	16	.....	.....	.....	.....	6
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aggregates	993	48	146	16	1,203	1,046	46	185	20	1,247
Percentages	82.54	3.99	12.14	1.33	100.00	83.89	3.69	10.82	1.60	100.00

FLOUR AND FEED.

(65 establishments.)

\$25.00 per wk. and over.	11	.....	.....	.....	11	23	.....	.....	.....	23
20.00 but under \$25.00	19	.....	.....	.....	19	16	.....	.....	.....	16
18.00 but under 20.00	21	.....	.....	.....	21	16	.....	.....	.....	16
15.00 but under 18.00	149	.....	.....	.....	149	74	.....	.....	.....	74
13.00 but under 15.00	51	.....	.....	.....	51	40	.....	.....	.....	40
12.00 but under 13.00	103	.....	.....	.....	103	34	.....	.....	.....	34
11.00 but under 12.00	50	.....	.....	.....	50	49	.....	.....	.....	40
10.00 but under 11.00	174	.....	.....	.....	174	272	.....	.....	.....	272
9.00 but under 10.00	227	1	.....	.....	228	172	1	.....	.....	173
8.00 but under 9.00	94	1	.....	.....	95	89	.....	.....	.....	89
7.00 but under 8.00	81	.....	2	.....	83	75	2	.....	.....	77
6.00 but under 7.00	68	.....	.....	.....	68	57	2	5	.....	64
5.50 but under 6.00	5	.....	.....	.....	5	6	.....	.....	.....	6
5.00 but under 5.50	3	.....	.....	.....	3	3	.....	1	.....	4
4.50 but under 5.00	9	.....	.....	.....	9	6	.....	3	.....	9
4.00 but under 4.50	3	.....	.....	1	4	2	1	2	.....	5
3.50 but under 4.00	2	7	.....	.....	9	.....	.....	.....	.....	.....
3.00 but under 3.50	7	.....	.....	.....	7	3	22	1	.....	26
2.50 but under 3.00	.....	.....	.....	.....	.....	1	.....	.....	.....	1
2.00 but under 2.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.50 but under 2.00	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aggregates	1,077	9	3	1	1,080	929	28	12	.....	969
Percentages	98.37	0.81	0.25	0.07	100.00	95.37	2.89	1.24	.....	100.00

Classified weekly earnings, by industries—continued.

FURNITURE.

(38 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	2	1			2	9				9
20.00 but under \$25.00	1				1	12				12
15.00 but under 20.00	12				12	15				15
13.00 but under 15.00	50				50	52				52
12.00 but under 13.00	45				45	94				94
11.00 but under 12.00	86				86	162				162
10.00 but under 11.00	62	2			64	112	1			113
9.00 but under 10.00	150				150	170				170
8.00 but under 9.00	289				289	300	1			301
7.00 but under 8.00	238				238	399	3			402
6.00 but under 7.00	407	5			412	427	5	4	1	437
5.50 but under 6.00	727	22			749	607	4	24		635
5.00 but under 5.50	100	4	12		116	74	22	13	3	117
4.50 but under 5.00	87	2	13		102	34	14	33	2	70
4.00 but under 4.50	31	3	55		89	26	13	88	6	113
3.50 but under 4.00	16	3	56		74	6	1	54		61
3.00 but under 3.50	12	1	55		68	13		57	2	72
2.50 but under 3.00	1	1	89	2	93	5	4	80	2	91
2.00 but under 2.50			97		97			61		61
1.50 but under 2.00			67	1	68			28		28
Under \$1.50			5		5			2		2
Aggregates	2,376	44	450	3	2,873	2,517	55	429	16	3,017
Percentages	82.80	1.54	15.65	.01	100.00	83.42	1.82	14.23	0.53	100.00

FURS, GLOVES AND MITTENS.

(9 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	3				3	2				2
20.00 but under \$25.00						2				2
15.00 but under 20.00	3				3	4				4
13.00 but under 15.00	4				4	5				5
12.00 but under 13.00	10				10	9				9
11.00 but under 12.00	8	3			11	6	2			8
10.00 but under 11.00	3	4			7	15	2			17
9.00 but under 10.00	12	6			18	2	4			6
8.00 but under 9.00	4	6			10	3	4			7
7.00 but under 8.00	5	3			8	5	5			10
6.00 but under 7.00	2	9			11	7	12			19
5.50 but under 6.00	9	22			31	13	24			37
5.00 but under 5.50	2	17			19	3	31	2		36
4.50 but under 5.00	4	15			19		10			10
4.00 but under 4.50	2	21	1		24	1	7			8
3.50 but under 4.00		22	1		23	4	13			17
3.00 but under 3.50		7			7		5			5
2.50 but under 3.00			1		1		9		3	12
2.00 but under 2.50				4	4		3	3		6
1.50 but under 2.00			1	2	3		6		1	7
Under \$1.50							1			1
Aggregates	71	135	4	9	219	76	139	6	4	224
Percentages	32.43	61.64	1.83	4.10	100.00	33.93	62.05	2.23	1.79	100.00

Classified weekly earnings, by industries—continued.

IRON GOODS (MALLEABLE).

(24 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 15 years and over.	Females 15 years and over.	Males under 15 years.	Females under 15 years.	Aggregates.	Males 15 years and over.	Females 15 years and over.	Males under 15 years.	Females under 15 years.	Aggregates.
\$25.00 per wk. and over.	121	.....	.....	.....	121	150	.....	.....	.....	150
20.00 but under \$25.00	234	.....	.....	.....	234	73	.....	.....	.....	73
18.00 but under 20.00	132	.....	.....	.....	132	113	.....	.....	.....	113
15.00 but under 18.00	201	.....	.....	.....	201	462	.....	.....	.....	462
13.00 but under 15.00	169	.....	.....	.....	169	403	.....	.....	.....	403
12.00 but under 13.00	511	.....	.....	.....	511	496	.....	.....	.....	496
11.00 but under 12.00	303	.....	.....	.....	303	258	.....	.....	.....	258
10.00 but under 11.00	240	.....	.....	.....	240	526	.....	.....	.....	526
9.00 but under 10.00	351	.....	.....	.....	351	605	1	8	.....	606
8.00 but under 9.00	539	.....	.....	.....	539	1,270	30	30	.....	1,300
7.00 but under 8.00	870	.....	1	.....	871	276	9	25	.....	304
6.00 but under 7.00	248	1	34	.....	287	2-5	2	50	.....	337
5.50 but under 6.00	121	1	53	.....	175	49	2	93	.....	143
5.00 but under 5.50	49	1	23	.....	72	53	2	97	.....	152
4.50 but under 5.00	48	.....	92	.....	140	37	6	74	.....	117
4.00 but under 4.50	8	.....	96	.....	106	18	.....	59	1	73
3.50 but under 4.00	.....	.....	124	.....	125	14	2	94	.....	110
3.00 but under 3.50	.....	.....	99	.....	102	.....	.....	33	1	34
2.50 but under 3.00	.....	.....	34	.....	34	.....	.....	.....	.....	.....
2.00 but under 2.50	.....	.....	2	.....	2	.....	.....	1	.....	1
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aggregates	4,145	9	562	.....	4,716	5,087	17	565	2	5,671
Percentages	87.89	0.19	11.92	.....	100.00	89.7	0.03	9.96	.04	100.00

KNIT GOODS.

(16 establishments.)

\$25.00 per wk. and over.	7	.....	.....	.....	7	5	.....	.....	.....	5
20.00 but under \$25.00	8	.....	.....	.....	8	8	.....	.....	.....	8
18.00 but under 20.00	11	.....	.....	.....	11	5	.....	.....	.....	5
15.00 but under 18.00	20	.....	.....	.....	20	20	.....	.....	.....	20
13.00 but under 15.00	15	.....	.....	.....	16	13	.....	.....	.....	13
12.00 but under 13.00	18	.....	.....	.....	18	13	.....	.....	.....	13
11.00 but under 12.00	17	6	.....	.....	23	19	18	.....	.....	37
10.00 but under 11.00	16	11	.....	.....	27	23	9	.....	.....	32
9.00 but under 10.00	40	17	.....	.....	57	67	31	9	1	102
8.00 but under 9.00	47	32	.....	.....	79	42	29	3	4	78
7.00 but under 8.00	52	34	10	16	112	60	91	51	33	189
6.00 but under 7.00	43	63	5	30	141	40	160	12	25	237
5.50 but under 6.00	.....	92	4	.....	96	12	86	6	9	113
5.00 but under 5.50	1	89	30	43	163	16	144	19	59	238
4.50 but under 5.00	3	147	31	18	189	.....	201	12	44	257
4.00 but under 4.50	1	146	25	90	262	.....	176	25	57	258
3.50 but under 4.00	1	155	6	32	194	1	168	16	144	329
3.00 but under 3.50	2	87	36	184	309	3	64	16	178	261
2.50 but under 3.00	.....	23	12	93	128	.....	13	43	116	172
2.00 but under 2.50	.....	22	12	200	235	.....	5	7	154	166
1.50 but under 2.00	.....	1	.....	74	75	.....	.....	7	30	37
Under \$1.50	.....	.....	.....	18	18	.....	3	.....	.....	3
Aggregates	302	925	172	803	2,192	349	1,199	174	854	2,575
Percentages	13.77	42.19	7.86	36.18	100.00	13.61	46.51	6.73	33.15	100.00

Classified weekly earnings, by industries—continued.

LAGER BEER.

(57 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 15 years and over.	Females 15 years and over.	Males under 15 years.	Females under 15 years.	Aggregates.	Males 15 years and over.	Females 15 years and over.	Males under 15 years.	Females under 15 years.	Aggregates.
\$25.00 per wk. and over.	27				27	19				19
20.00 but under \$25.00	20				20	19				19
18.00 but under 20.00	27				27	34				34
15.00 but under 18.00	439				489	243				243
12.00 but under 15.00	515				515	441				441
11.00 but under 12.00	437				437	762				762
10.00 but under 11.00	127				127	227				227
9.00 but under 10.00	163				163	314				314
8.00 but under 9.00	309				309	159				159
7.00 but under 8.00	65				65	75				75
6.00 but under 7.00	42				42	34				34
5.00 but under 6.00	128	1			129	85	3	1		89
4.50 but under 5.00	10	1	3		14	4	7			11
4.00 but under 4.50	9	2	4		15	15	16	4		35
3.50 but under 4.00	127	30	4		205	16	83	7		106
3.00 but under 3.50	1	5	10		16	19	65	10		94
2.50 but under 3.00	68	113	5		186	22	68	91	1	182
2.00 but under 2.50	66	2	78		137	29	44	83	78	234
1.50 but under 2.00	3	34	37		74	1	60	95	9	156
Under \$1.50										
Aggregates	2,417	270	226	186	3,093	2,548	848	196	183	3,276
Percentages	78.14	8.73	7.31	5.82	100.00	77.80	10.63	5.98	5.59	100.00

LEATHER.

(25 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 15 years and over.	Females 15 years and over.	Males under 15 years.	Females under 15 years.	Aggregates.	Males 15 years and over.	Females 15 years and over.	Males under 15 years.	Females under 15 years.	Aggregates.
\$25.00 per wk. and over.	7				7	4				4
20.00 but under \$25.00	11				11	10				10
18.00 but under 20.00	18				18	41				41
15.00 but under 18.00	96				96	77				77
12.00 but under 15.00	123				123	191				191
11.00 but under 12.00	57				57	274				274
10.00 but under 11.00	176				176	106				106
9.00 but under 10.00	287				287	392				392
8.00 but under 9.00	952				952	677				677
7.00 but under 8.00	1,087	4			1,091	1,347				1,347
6.00 but under 7.00	798				798	815				815
5.50 but under 6.00	196	26	7		229	157	25	116		298
5.00 but under 5.50	64	25	5		94	51	32	19		102
4.50 but under 5.00	35	49	12		96	19	60	27		106
4.00 but under 4.50	7	60	43		110	5	60	30		95
3.50 but under 4.00	32	53	15		84	1	30	42	2	77
3.00 but under 3.50	27	47	15		89	27	51	37		115
2.50 but under 3.00	21	37	35		93	22	30	52		104
2.00 but under 2.50	37	18	18		73		7	20		27
1.50 but under 2.00										
Under \$1.50										
Aggregates	3,916	244	240	68	4,468	4,164	249	317	89	4,814
Percentages	87.64	5.46	5.37	1.53	100.00	86.47	5.15	6.56	1.82	100.00

Classified weekly earnings, by industries—continued.

LUMBER, LATH AND SHINGLES.

(124 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	207				207	255				255
20.00 but under \$25.00	206				206	178				178
18.00 but under 20.00	156				156	179				179
16.00 but under 18.00	314				314	450	1			481
13.00 but under 16.00	443				443	547				547
12.00 but under 13.00	476				476	901				901
11.00 but under 12.00	289	1			290	711	3			714
10.00 but under 11.00	763				763	1,774				1,777
9.00 but under 10.00	3,322	1			3,323	5,606	3	14		5,622
8.00 but under 9.00	3,116	2			3,118	4,413	1	2		4,416
7.00 but under 8.00	3,347	1	12		3,360	2,368	6	43		2,417
6.00 but under 7.00	1,517	14	59		1,590	614	20	101		735
5.50 but under 6.00	217	16	28		261	67	14	25		106
5.00 but under 5.50	126	26	31		183	43	23	58		124
4.50 but under 5.00	183	13	79		241	36	3	75		114
4.00 but under 4.50	12	2	59		73	9	2	49		60
3.50 but under 4.00	4	8	72		84	13		56		69
3.00 but under 3.50		9	74	2	85		3	68	1	72
2.50 but under 3.00		7	37	2	46		8	18		26
2.00 but under 2.50		2			2		2	12	2	16
1.50 but under 2.00		1	9		10			2		2
Under \$1.50										
Aggregates	14,664	108	460	4	15,231	18,198	89	526	3	18,819
Percentages	96.27	.68	3.03	.02	100.00	96.74	.47	2.78	.01	100.00

MALT.

(16 establishments.)

\$25.00 per wk. and over.	11				11	8				8
20.00 but under \$25.00	3				3	4				4
18.00 but under 20.00	4				4	3				3
15.00 but under 18.00	14				14	16				16
13.00 but under 15.00	32				32	42				42
12.00 but under 13.00	94				94	84				84
11.00 but under 12.00	106				106	140				140
10.00 but under 11.00	93				93	113				113
9.00 but under 10.00	89				89	62				62
8.00 but under 9.00	63				63	40				40
7.00 but under 8.00	25				25	15				15
6.00 but under 7.00	6	1			7	7				7
5.50 but under 6.00								1		1
5.00 but under 5.50						1		2		3
4.50 but under 5.00			2		2					
4.00 but under 4.50							1	4		5
3.50 but under 4.00							2	1		3
3.00 but under 3.50										
2.50 but under 3.00										
2.00 but under 2.50										
1.50 but under 2.00				1	1					
Under \$1.50										
Aggregates	542	1	2	1	546	536	3	8		546
Percentages	99.26	0.19	0.36	0.19	100.00	97.99	0.55	1.46		100.00

Classified weekly earnings, by industries—continued.

MACHINES AND MACHINERY.

(34 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	59	.....	.....	.....	59	87	.....	.....	.....	87
20.00 but under \$25.00	89	.....	.....	.....	89	160	.....	.....	.....	160
18.00 but under 20.00	185	.....	.....	.....	185	250	1	.....	.....	251
15.00 but under 18.00	634	.....	.....	.....	634	970	1	.....	.....	971
13.00 but under 15.00	720	.....	.....	.....	720	767	.....	4	.....	771
12.00 but under 13.00	545	1	.....	.....	546	633	.....	.....	.....	633
11.00 but under 12.00	181	.....	.....	.....	181	239	1	.....	.....	239
10.00 but under 11.00	455	2	.....	.....	457	538	2	.....	.....	590
9.00 but under 10.00	864	3	.....	.....	867	1,003	4	.....	.....	1,007
8.00 but under 9.00	622	2	1	.....	625	804	4	5	.....	813
7.00 but under 8.00	525	2	3	.....	533	675	2	5	.....	682
6.00 but under 7.00	236	.....	13	.....	259	273	2	20	.....	295
5.50 but under 6.00	19	1	12	.....	32	74	1	19	.....	94
5.00 but under 5.50	45	.....	28	.....	73	32	3	57	.....	92
4.50 but under 5.00	46	.....	59	.....	105	72	1	52	.....	125
4.00 but under 4.50	11	2	34	.....	47	22	4	29	.....	55
3.50 but under 4.00	5	.....	48	3	56	20	.....	32	3	55
3.00 but under 3.50	6	.....	117	.....	123	63	.....	75	3	141
2.50 but under 3.00	.....	.....	10	5	15	11	.....	9	.....	20
2.00 but under 2.50	.....	.....	17	.....	17	2	.....	7	.....	9
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aggregates	5,300	131	342	8	5,663	6,744	26	315	6	7,091
Percentages	93.59	.23	6.04	.14	100.00	95.11	.36	4.44	.09	100.00

OFFICE AND SALOON FIXTURES.

(7 establishments.)

\$25.00 per wk. and over.	1	.....	.....	.....	1	5	.....	.....	.....	5
20.00 but under \$25.00	1	.....	.....	.....	1	.....	.....	.....	.....	.....
18.00 but under 20.00	4	.....	.....	.....	4	6	.....	.....	.....	6
15.00 but under 18.00	19	.....	.....	.....	10	54	.....	.....	.....	54
13.00 but under 15.00	35	.....	.....	.....	35	36	.....	.....	.....	36
12.00 but under 13.00	33	.....	.....	.....	23	37	.....	.....	.....	37
11.00 but under 12.00	23	.....	.....	.....	28	67	.....	.....	.....	67
10.00 but under 11.00	76	.....	.....	.....	76	47	.....	.....	.....	47
9.00 but under 10.00	96	.....	.....	.....	96	78	.....	.....	.....	78
8.00 but under 9.00	47	.....	.....	.....	47	49	.....	.....	.....	49
7.00 but under 8.00	93	.....	.....	.....	93	95	.....	.....	.....	95
6.00 but under 7.00	22	.....	.....	.....	22	21	.....	.....	.....	21
5.50 but under 6.00	8	.....	2	.....	10	2	.....	.....	.....	7
5.00 but under 5.50	15	.....	6	.....	21	5	.....	19	.....	24
4.50 but under 5.00	14	.....	2	.....	16	.....	.....	2	.....	2
4.00 but under 4.50	8	.....	2	.....	10	.....	.....	18	.....	20
3.50 but under 4.00	.....	.....	22	.....	22	3	.....	3	.....	6
3.00 but under 3.50	.....	.....	31	.....	31	.....	.....	7	.....	7
2.50 but under 3.00	.....	.....	3	.....	3	.....	.....	10	.....	10
2.00 but under 2.50	.....	.....	9	.....	9	.....	.....	.....	.....	.....
1.50 but under 2.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aggregates	491	.....	77	.....	568	512	.....	59	.....	571
Percentages	86.62	.....	13.38	.....	100.00	89.67	.....	10.33	.....	100.00

Classified weekly earnings, by industries—continued.

PAINTS, OILS, AND CRUDE CHEMICALS.

(5 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	5				5	10				10
20.00 but under \$25.00.	2				2	6				6
18.00 but under 20.00.	3				3	2				2
15.00 but under 18.00.										
13.00 but under 15.00.	3				3	4				4
12.00 but under 13.00.	9				9	5				5
11.00 but under 12.00.	8				8	5				5
10.00 but under 11.00.	4	2			6	12				12
9.00 but under 10.00.	23				23	28				28
8.00 but under 9.00.	15				15	18				18
7.00 but under 8.00.	10				10					
6.00 but under 7.00.	6	1			7	9				9
5.50 but under 6.00.						1				1
5.00 but under 5.50.	2				2					
4.50 but under 5.00.	5				5	9				9
4.00 but under 4.50.						2	2	8		12
3.50 but under 4.00.	3	2			5					
3.00 but under 3.50.		2	1		3					
2.50 but under 3.00.						1				1
2.00 but under 2.50.										
1.50 but under 2.00.										
Under \$1.50										
Aggregates	98	7	1		106	112	2	8		122
Percentages	92.50	6.58	0.92		100.00	91.82	1.63	6.55		100.00

PAPER AND PULP.

(31 establishments.)

\$25.00 per wk. and over.	8				8	6				6
20.00 but under 25.00.	19				19	32				32
18.00 but under 20.00.	76				76	88				88
15.00 but under 18.00.	92				92	113				113
13.00 but under 15.00.	65				65	73				73
12.00 but under 13.00.	96				96	84				84
11.00 but under 12.00.	45				45	57				57
10.00 but under 11.00.	191				191	229				229
9.00 but under 10.00.	574				574	854				854
8.00 but under 9.00.	310				310	401				401
7.00 but under 8.00.	884	7			891	615	6		1	622
6.00 but under 7.00.	202	32	10	1	245	200	51	5		256
5.50 but under 6.00.	27	17		1	45	2	5	10		17
5.00 but under 5.50.	39	23	3		65	17	36	8		61
4.50 but under 5.00.	46	342	14	5	406	21	408	71	10	509
4.00 but under 4.50.	2	82	8	1	93		39	5	1	45
3.50 but under 4.00.	1	33	20	12	66		83	13	27	123
3.00 but under 3.50.		26	12	18	56		6	14	10	30
2.50 but under 3.00.				20	20			2	10	12
2.00 but under 2.50.				12	12				10	10
1.50 but under 2.00.									8	8
Aggregates	2,656	562	67	70	3,355	2,792	634	128	77	3,631
Percentages.	79.16	16.76	1.99	2.09	100.00	76.89	17.47	3.52	2.12	100.00

Classified weekly earnings, by industries—continued.

SADDLERY, HARNESS, ETC.

(3 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	1				1	1				1
21.00 but under 25.00.	2				2	2				2
18.00 but under 21.00.	2				2	2				2
15.00 but under 18.00.	13				13	12				12
13.00 but under 15.00.	6				6	9				9
12.00 but under 13.00.	22				22	24				24
11.00 but under 12.00.	5				5	8				8
10.00 but under 11.00.	29				29	18				18
9.00 but under 10.00.	16				16	19				19
8.00 but under 9.00.	18				18	26				26
7.00 but under 8.00.	30	3			33	19				19
6.00 but under 7.00.	19	1			20	16	5			21
5.50 but under 6.00.	2	6			8	24	5			29
5.00 but under 5.50.	3				3	8	10			18
4.50 but under 5.00.		2		3	5	1	3			4
4.00 but under 4.50.	2	2		4	6	1	3			4
3.50 but under 4.00.		2		4	6				11	11
3.00 but under 3.50.		2		10	12		2		7	9
2.50 but under 3.00.			4	15	19				20	20
2.00 but under 2.50.									21	21
1.50 but under 2.00.			2		2			3		3
Under \$1.50										
Aggregates	170	25	23	43	261	168	28	26	64	286
Percentages	65.14	9.58	8.81	16.47	100.00	58.74	9.79	9.06	22.38	100.00

SASH, DOORS, BLINDS, ETC.

(58 establishments.)

\$25.00 per wk. and over.	4				4	4				4
20.00 but under 25.00.	21				21	17				17
15.00 but under 20.00.	23				23	35				35
12.00 but under 15.00.	97				97	108				108
10.00 but under 12.00.	86				86	88				86
9.00 but under 10.00.	180				180	271				271
8.00 but under 9.00.	106				106	86				86
7.00 but under 8.00.	262				262	271				271
6.00 but under 7.00.	352	1			353	538	1			539
5.00 but under 6.00.	293				293	497				497
4.00 but under 5.00.	485				485	631	1			632
3.00 but under 4.00.	685	5			690	500	1			502
2.00 but under 3.00.	54	1			55	84	1			87
1.50 but under 2.00.	73				73	70				73
1.00 but under 1.50.	106	1	35		142	77	2	30	1	110
0.50 but under 1.00.	20	2	35		57	32	9	42	2	85
0.00 but under 0.50.	32	2	67	41	142	4	2	83	8	97
Under \$1.50	4	5	143	4	156	11		132	8	151
			79	2	81			49	8	57
			37	1	38			39	4	43
Aggregates	2,833	17	402	48	3,350	3,332	19	389	31	3,761
Percentages	86.05	0.53	12.00	1.42	100.00	88.53	0.51	10.24	0.72	100.00

Classified weekly earnings, by industries—continued.

SHEET METAL GOODS.

(23 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	12				12	14				14
20.00 but under \$25.00.	12				12	15				15
18.00 but under 20.00.	14				14	18				18
15.00 but under 18.00.	63				63	62				62
13.00 but under 15.00.	42				42	54				54
12.00 but under 13.00.	76				76	80				80
11.00 but under 12.00.	40				40	44				44
10.00 but under 11.00.	74				74	81				81
9.00 but under 10.00.	133				133	119				119
8.00 but under 9.00.	143				142	126				126
7.00 but under 8.00.	207				207	140	1			141
6.00 but under 7.00.	155	1	1		157	163	2			164
5.50 but under 6.00.	62	2			54	73	2			75
5.00 but under 5.50.	95	6	5		106	89	6	2		97
4.50 but under 5.00.	75	10	2		87	91	24	6	2	123
4.00 but under 4.50.	207	15	21		243	218	19	12	4	253
3.50 but under 4.00.	81	23	54	10	373	87	229	41	6	363
3.00 but under 3.50.	1	4	123	72	205	2	29	133	93	262
2.50 but under 3.00.		1	79	28	108		1	103	46	150
2.00 but under 2.50.			32	13	45			50	23	73
1.50 but under 2.00.								6		6
Under \$1.50										
Aggregates	1,431	267	322	123	2,133	1,475	312	358	174	2,319
Percentages	67.53	12.12	14.69	5.66	100.00	63.61	13.45	15.44	7.50	100.00

SHIP AND BOAT BUILDING.

(6 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	3				3	5				5
20.00 but under \$25.00.	19				19	15				15
18.00 but under 20.00.	14				14	19				18
15.00 but under 18.00.	319				319	221				221
13.00 but under 15.00.	115				115	157				157
12.00 but under 13.00.	84				84	109				109
11.00 but under 12.00.	23				23	20				20
10.00 but under 11.00.	51				51	111				111
9.00 but under 10.00.	506				506	487				487
8.00 but under 9.00.	99				99	9				9
7.00 but under 8.00.	102				102	120				120
6.00 but under 7.00.	89	2			91	64				64
5.50 but under 6.00.										
5.00 but under 5.50.										
4.50 but under 5.00.	2				2	3				3
4.00 but under 4.50.			2		2	2				2
3.50 but under 4.00.										
3.00 but under 3.50.										
2.50 but under 3.00.										
2.00 but under 2.50.										
1.50 but under 2.00.										
Under \$1.50										
Aggregates	1,426	2	2		1,430	1,336	5			1,341
Percentages	99.74	0.13	0.13		100.00	99.63	0.37			100.00

Classified weekly earnings, by industries—continued.

SOAP, LYE, POTASH, ETC.

(8 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.
20.00 but under 25.00	2	.....	.....	.....	2
18.00 but under 20.00	3	5	.....	.....	.....	5
15.00 but under 18.00	6	.....	.....	6	2	.....	.....	.....	2
13.00 but under 15.00	5	.....	.....	.....	5
12.00 but under 13.00	9	.....	.....	.....	9
11.00 but under 12.00	3	.....	.....	.....	3
10.00 but under 11.00	11	.....	.....	11	9	.....	.....	.....	9
9.00 but under 10.00	15	.....	.....	15	17	.....	.....	.....	17
8.00 but under 9.00	15	.....	.....	15	20	.....	.....	.....	20
7.00 but under 8.00	15	.....	.....	15	17	.....	.....	.....	17
6.00 but under 7.00	16	.....	1	17	4	.....	.....	.....	4
5.00 but under 6.00	5	.....	1	6	5	.....	.....	.....	5
5.00 but under 5.50	3	.....	2	13	.....	.....	.....	.....	.....
4.50 but under 5.00	1	.....	1	2	2	.....	.....	.....	.....
4.00 but under 4.50	9	.....	.....	9	8	.....	2	.....	12
3.50 but under 4.00	17	.....	5	22	3	.....	.....	.....	.....
3.00 but under 3.50	15	.....	4	21	.....	26	.....	18	49
2.50 but under 3.00	10	.....	3	15	.....	6	.....	15	21
2.00 but under 2.50	2	.....
1.50 but under 2.00
Under \$1.50
Aggregates	89	60	13	12	174	100	50	10	36	196
Percentages	51.15	34.49	7.47	6.89	100.00	51.02	25.52	5.10	18.36	100.00

STAVES AND HEADING.

(15 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.
20.00 but under 25.00	1	.....	.....	.....	1
18.00 but under 20.00	8	.....	.....	8	11	.....	.....	.....	11
15.00 but under 18.00	4	.....	.....	4	8	.....	.....	.....	8
13.00 but under 15.00	7	.....	.....	7	9	.....	.....	.....	9
12.00 but under 13.00	9	.....	.....	9	11	.....	.....	.....	11
11.00 but under 12.00	7	.....	.....	7	6	.....	.....	.....	6
10.00 but under 11.00	17	.....	.....	17	26	.....	.....	.....	26
9.00 but under 10.00	65	.....	.....	65	89	.....	.....	.....	89
8.00 but under 9.00	111	.....	.....	111	66	.....	.....	.....	66
7.00 but under 8.00	135	.....	.....	135	120	.....	.....	.....	120
6.00 but under 7.00	33	.....	5	38	28	.....	15	.....	43
5.50 but under 6.00	18	.....	11	29	8	.....	18	.....	26
5.00 but under 5.50	3	3	1	.....	10	.....	11
4.50 but under 5.00	8	.....	21	29	.....	.....	12	.....	12
4.00 but under 4.50	8	8	.....	.....	21	.....	21
3.50 but under 4.00	21	21	.....	.....	14	.....	14
3.00 but under 3.50	10	10	.....	.....	.....	.....	.....
2.50 but under 3.00	5	.....	5
2.00 but under 2.50
1.50 but under 2.00
Under \$1.50
Aggregates	422	.....	79	.....	501	384	.....	95	.....	479
Percentages	84.23	.....	15.77	.....	100.00	80.17	.....	19.83	.....	100.00

Classified weekly earnings, by industries—continued.

STONE (GRANITE, MARBLE, ETC.).

(9 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 15 years and over.	Females 15 years and over.	Males under 15 years.	Females under 15 years.	Aggregates.	Males 15 years and over.	Females 15 years and over.	Males under 15 years.	Females under 15 years.	Aggregates.
\$25.00 per wk. and over.	1				1	3				3
20.00 but under \$25.00	13				13	31				31
18.00 but under 20.00	4				4	23				23
15.00 but under 18.00	21				21	17				17
13.00 but under 15.00	21				21	8				8
12.00 but under 13.00	36				36	19				19
11.00 but under 12.00	6				6	4				4
10.00 but under 11.00	22				22	64				64
9.00 but under 10.00	29				29	77				77
8.00 but under 9.00	16				16					
7.00 but under 8.00	9		1		10	8				8
6.00 but under 7.00	5				5					
5.50 but under 6.00	2				2					
5.00 but under 5.50	2		2		4			1		1
4.50 but under 5.00						1				1
4.00 but under 4.50										
3.50 but under 4.00	1				1					
3.00 but under 3.50			1		1					
2.50 but under 3.00										
2.00 but under 2.50										
1.50 but under 2.00										
Under \$1.50										
Aggregates	188		4		192	256		1		256
Percentages	97.92		2.08		100.00	99.61		0.39		100.00

TOYS AND GAMES.

(5 establishments.)

\$25.00 per wk. and over.						1				1
20.00 but under \$25.00						2				2
18.00 but under 20.00	2				2	7				7
15.00 but under 18.00	4				4	9				9
13.00 but under 15.00	9				9	6				6
12.00 but under 13.00	5				5	4				4
11.00 but under 12.00	6				6	17				17
10.00 but under 11.00	14				14	31				31
9.00 but under 10.00	21				21	18				18
8.00 but under 9.00	9				9	42				42
7.00 but under 8.00	32				32	34				34
6.00 but under 7.00	59				59	10				10
5.50 but under 6.00	6				6	20				20
5.00 but under 5.50	19		3		19	2		4		4
4.50 but under 5.00	8	1	9		18	11	8			19
4.00 but under 4.50	6		8		14	3	4			7
3.50 but under 4.00	16	3	13		32	3	6			9
3.00 but under 3.50		3	34	3	40	21	11			32
2.50 but under 3.00		2	12	7	21	16	1			17
2.00 but under 2.50			21	4	25	5	8			13
1.50 but under 2.00			36	22	58	10	5			15
Under \$1.50			5	3	8					
Aggregates	213	9	141	39	402	245	14	106	31	396
Percentages	52.98	2.23	35.08	9.71	100.00	61.88	3.53	26.77	7.84	100.00

Classified weekly earnings, by industries—continued.

TRUNKS, VALISES, ETC.

(6 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	1				1					3
20.00 but under \$25.00.	1				1	3				
18.00 but under 20.00.	2				2					10
15.00 but under 18.00.	8				8	10				12
13.00 but under 15.00.	6				6	12				13
12.00 but under 13.00.	12				12	13				10
11.00 but under 12.00.	6				6	10				24
10.00 but under 11.00.	20	1			21	23	1			45
9.00 but under 10.00.	57	1			58	37	1	7		25
8.00 but under 9.00.	32				32	25				39
7.00 but under 8.00.	29				29	33		6		26
6.00 but under 7.00.	15	2	1		18	23	3			24
5.50 but under 6.00.	12	3			16	13	5	2	4	19
5.00 but under 5.50.		6	6		12	3	11	5		23
4.50 but under 5.00.	1	12	10		23	4	13	9	3	29
4.00 but under 4.50.		11	13	3	27	1	6	10	6	21
3.50 but under 4.00.		9	9	3	21		5	9	7	32
3.00 but under 3.50.			3		3	1		9	12	11
2.50 but under 3.00.		1	7	14	22			3	8	14
2.00 but under 2.50.			5	14	19			7	7	5
1.50 but under 2.00.				3	3				5	
Under \$1.50										
Aggregates	202	46	64	37	339	211	45	67	52	375
Percentages	59.58	13.57	15.93	10.92	100.00	56.26	12.00	17.87	13.87	100.00

.. VENEER.

(7 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.										
20.00 but under \$25.00.										5
18.00 but under 20.00.	1				1	5				6
15.00 but under 18.00.	1				1	6				18
13.00 but under 15.00.	7				7	18				8
12.00 but under 13.00.	1				1	8				6
11.00 but under 12.00.	2				2	6				41
10.00 but under 11.00.	19				19	41				86
9.00 but under 10.00.	34				34	56				61
8.00 but under 9.00.	42				42	61				92
7.00 but under 8.00.	80				80	92				81
6.00 but under 7.00.	61		10		71	81				12
5.50 but under 6.00.	7		10		17	12				8
5.00 but under 5.50.	11		10		21	2		6		52
4.50 but under 5.00.	7		23		30			52		22
4.00 but under 4.50.			21		21			22		7
3.50 but under 4.00.			32		32			7		26
3.00 but under 3.50.			45		45			26		1
2.50 but under 3.00.			1		1			1		2
2.00 but under 2.50.								2		
1.50 but under 2.00.										
Under \$1.50										
Aggregates	273		152		425	418		116		534
Percentages	64.24		35.76		100.00	78.27		21.73		100.00

Classified weekly earnings, by industries—continued.

WAGONS, CARRIAGES AND SLEIGHS.

(39 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 15 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 15 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	5	.....	.....	.....	5	14	.....	.....	.....	14
20.00 but under \$25.00...	16	.....	.....	.....	16	33	.....	.....	.....	33
15.00 but under 20.00...	40	.....	.....	.....	40	46	.....	.....	.....	46
10.00 but under 15.00...	173	.....	.....	.....	173	196	.....	.....	.....	196
7.00 but under 10.00...	157	.....	.....	.....	157	249	.....	.....	.....	249
5.00 but under 7.00...	327	.....	.....	.....	327	304	2	.....	.....	306
3.00 but under 5.00...	227	2	.....	.....	229	122	.....	.....	.....	122
2.00 but under 3.00...	261	1	.....	.....	262	334	.....	.....	.....	334
1.50 but under 2.00...	424	5	.....	.....	429	542	6	.....	.....	548
1.00 but under 1.50...	329	2	.....	.....	331	257	8	.....	.....	265
7.00 but under 8.00...	405	9	8	.....	422	465	11	3	.....	479
6.00 but under 7.00...	128	5	34	.....	167	109	6	43	.....	158
5.50 but under 6.00...	16	.....	4	.....	20	37	1	8	.....	46
5.00 but under 5.50...	35	2	4	.....	41	30	3	1	.....	34
4.50 but under 5.00...	16	2	44	.....	62	22	2	28	.....	52
4.00 but under 4.50...	5	2	19	.....	26	3	4	31	.....	38
3.50 but under 4.00...	4	6	23	.....	33	.....	6	15	1	22
3.00 but under 3.50...	.....	6	28	.....	34	.....	5	20	3	28
2.50 but under 3.00...	.....	.....	4	.....	4	.....	.....	1	.....	4
2.00 but under 2.50...	.....	1	5	.....	6	.....	.....	2	.....	2
1.50 but under 2.00...	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	7	.....	7
Aggregates	2,568	43	173	.....	2,784	2,763	54	163	4	2,984
Percentages	92.24	2.55	6.21	.....	100.00	92.59	1.82	5.46	0.13	100.00

WOODENWARE.

(8 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 15 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 15 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	1	.....	.....	.....	1	1	.....	.....	.....	1
20.00 but under \$25.00...	4	.....	.....	.....	4	10	.....	.....	.....	10
15.00 but under 20.00...	6	.....	.....	.....	6	12	.....	.....	.....	12
10.00 but under 15.00...	12	.....	.....	.....	12	29	.....	.....	.....	29
7.00 but under 10.00...	20	.....	.....	.....	20	17	.....	.....	.....	17
5.00 but under 7.00...	15	.....	.....	.....	15	26	.....	.....	.....	26
3.00 but under 5.00...	32	.....	.....	.....	32	15	.....	.....	.....	15
2.00 but under 3.00...	87	.....	.....	.....	87	53	.....	.....	.....	53
1.50 but under 2.00...	66	.....	.....	.....	66	171	.....	.....	.....	171
1.00 but under 1.50...	367	.....	.....	.....	367	417	.....	.....	.....	417
7.00 but under 8.00...	437	.....	.....	.....	437	348	.....	.....	.....	348
6.00 but under 7.00...	163	.....	.....	.....	163	132	.....	.....	.....	132
5.50 but under 6.00...	26	.....	5	.....	31	37	.....	.....	.....	37
5.00 but under 5.50...	14	.....	2	.....	16	11	.....	.....	.....	11
4.50 but under 5.00...	8	.....	115	.....	123	20	.....	76	.....	96
4.00 but under 4.50...	.....	.....	6	.....	6	11	.....	86	.....	97
3.50 but under 4.00...	.....	.....	28	.....	28	1	.....	44	.....	45
3.00 but under 3.50...	.....	.....	38	.....	38	.....	.....	10	.....	11
2.50 but under 3.00...	.....	.....	59	.....	53	.....	.....	2	.....	2
2.00 but under 2.50...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.50 but under 2.00...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aggregates	1,263	.....	247	.....	1,510	1,312	.....	218	.....	1,530
Percentages	83.64	.....	16.36	.....	100.00	85.75	.....	14.25	.....	100.00

Classified weekly earnings, by industries—continued.

WOOLEN AND WORSTED GOODS.

(16 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over.	7	7			7	5				5
20.00 but under 25.00...	7	7			7	4				4
18.00 but under 20.00...	14				14	9				9
15.00 but under 18.00...	12				12	17				17
13.00 but under 15.00...	15				15	22	3			25
12.00 but under 13.00...	15				15	14	1			15
11.00 but under 12.00...	13		1		14	26				26
10.00 but under 11.00...	37	3			40	23	1			24
9.00 but under 10.00...	65	15			80	47	27			74
8.00 but under 9.00...	19	37			56	22	33			55
7.00 but under 8.00...	31	34			65	54	33			88
6.00 but under 7.00...	162	56	1		159	93	51	1		145
5.50 but under 6.00...	11	16	3		30	3	23			26
5.00 but under 5.50...	12	28	6	1	47	22	36		4	62
4.50 but under 5.00...	18	38	6	4	66	27	45	15	11	98
4.00 but under 4.50...	2	71	6		79	8	86	6	8	108
3.50 but under 4.00...	9	44	14	8	75	5	50	12	5	72
3.00 but under 3.50...	5	70	13	90	178		32	12	57	101
2.50 but under 3.00...		8	10	58	76			3	31	34
2.00 but under 2.50...		3	8	17	28			13	14	27
1.50 but under 2.00...				12	12				9	9
Under \$1.50										
Aggregates	394	423	68	190	1,075	401	418	62	139	1,020
Percentages	36.65	39.34	6.33	17.68	100.00	39.32	40.98	6.07	13.63	100.00

The preceding table, covering about twenty-two pages, relates to the weekly earnings of mechanics, operatives and laborers in our manufacturing industries in 1898 and 1899. With this table another step in the development of these returns, as a whole, is begun. Under their respective heads we have thus far considered private firms and corporations, partners and stockholders, capital invested, stock or material used, total amount paid as wages, value of goods made, persons employed by months, average smallest and greatest number of persons employed, persons employed by the hour, day and piece. At this point the above table showing classified weekly earnings is reached, and to the facts in this table a few pages will be devoted.

The data from which the facts in this case are compiled were received from the same sources as the other data in this part.

It was obtained from the same 992 establishments and covers the same 43 industries. It relates to the number of persons employed at classified weekly earnings. The number of persons given, is that which obtained during the week when the greatest number were employed, and the earnings reported is that for the same week. The number employed are classified as to sex and age, the earnings according to amounts.

The classification as to sex and age is simple, and really needs no explanation. The persons employed are simply divided as to males and females, and each in turn into those 18 years of age or over, and those under 18 years. This classification is maintained for each industry, or throughout the whole of the table where the classified earnings of those in each class are shown.

The classification of weekly earnings is also easily understood. It is simply a grouping of earnings in such a way that all those whose wages vary between certain limits come within a certain class. Thus for instance all whose weekly earnings range from \$6.00 to \$7.00 per week comes in the class \$6.00, but under \$7.00 per week, and all who get \$7.00 but less than \$8.00 per week comes in the class \$7.00 but under \$8.00. Classification of wages has been adopted almost as a matter of necessity. The rate of wages varies so much, and the wage earners are so numerous that without classification no comprehensive view of the whole could be had.

The data of earnings in this case, was, with the other facts presented, obtained from the employers, or manufacturers. This is, by far, the best source from which reliable data of this kind can be had. The employers keep accurate records, not only of the rate of wages of each person employed, but of the amount paid. To obtain the facts direct from the workers, on the other hand, is combined with many difficulties. In the first place they are too numerous to be reached individually. Then again the motives on their part for coloring the returns are greater than for the employers. There are also many other reasons why safer returns can be had from the employers' books than from any other source.

Owing to the number of classifications a great deal of space was needed for the figures for each industry. So much space,

indeed, was required that the figures for two industries only could be arranged for on each page. This is the reason why the table is so long, or cover so many more pages than any other table in this part. As it was inconvenient to analyze the figures for each industry separately, the figures for all have been combined in one table, in the same way as for hour, day and piece hands. This table, thus showing the classified weekly earnings for the greatest number of persons employed in all industries is presented as follows, and the data in the same is explained as fully as was thought necessary.

Classified weekly earnings in all industries.

(992 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Total.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.
\$25.00 per wk. and over.	655	.....	.....	.....	655	750	.....	.....	.....	750
20.00 but under \$25.00.	963	.....	.....	.....	963	906	.....	.....	.....	907
15.00 but under 20.00.	1,163	.....	.....	.....	1,163	1,305	.....	.....	.....	1,306
10.00 but under 15.00.	3,642	.....	.....	.....	3,642	4,133	.....	.....	.....	4,134
7.50 but under 10.00.	3,531	.....	.....	.....	3,531	4,132	.....	.....	.....	4,134
5.00 but under 7.50.	4,283	.....	.....	.....	4,283	5,470	.....	.....	.....	5,480
2.50 but under 5.00.	4,495	.....	.....	.....	4,495	6,135	.....	.....	.....	6,135
1.50 but under 2.50.	4,571	.....	.....	.....	4,571	6,853	.....	.....	.....	6,853
Under \$1.50	11,074	.....	.....	.....	11,074	13,935	.....	.....	.....	13,935
Totals	64,393	7,234	7,111	3,063	81,771	72,164	7,951	6,777	3,276	90,171
Per Cent.	78.34	8.85	3.61	3.70	100.00	80.03	8.82	7.52	3.63	100.00

In the above exhibit all industries are included. It therefore shows the classified weekly earnings in 1898 and 1899; first of all male employes 18 years of age and over; second of all female employes 18 years of age and over; third of all male employes under 18 years; and fourth of all female employes under 18 years of age. The classes in the wage scale range from \$25.00 per week and over to under \$1.50 per week. The number of persons

to each class varies greatly, the fewest number in each case being found in the highest and lowest classes. In the higher classes the males 18 years and over predominates; in the lower the females and young persons, or children.

One way to get a clear idea of the exhibit is to read the lines opposite each wage class. Take one line for instance, that of \$9.00 per week but under \$10.00. Read across the page, it is shown, that in 1898, this was the weekly earnings of 11,074 males 18 and over; 102 females 18 and over; 2 males under 18; and 2 females under 18, or of a total of 11,180 persons. If the reading is continued for 1899 it is seen that for that year the earnings named was received by 13,935 males, 18 years and over; 152 females 18 and over; 56 males under 18 years, and 1 female under 18, or by a total of 14,144 persons. Each line in the table might be taken up and explained in this way; but it does not seem that this is necessary. The illustrations given are sufficient to show what the figures mean.

The figures in the exhibit, as they stand, do not bring out their meaning as well as when expressed in per cent. of the total. For this reason two exhibits in which their per cent. relation is given are included. The first of these shows the relation of the number in each wage class to the total in all wage classes. The second shows the per cent. of males and females over and under 18 years, respectively, in each wage class to the total persons in that class. These two exhibits are presented in order.

Respective per cent. of the males and females over and under 18 years in each wage class, of the total number of males and females over and under 18 years in the class.

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Total.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.
	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.
\$25.00 per wk. and over.	1.02	1.04			1.81	1.04				1.83
20.00 but under \$25.00.	1.04				1.18	1.25	.01			1.00
18.00 but under 20.00.	1.82				1.42	1.82	.01			1.45
15.00 but under 18.00.	5.69				4.45	5.72	.01			4.58
13.00 but under 15.00.	5.54	.04			4.32	5.72	.02	.06		4.59
12.00 but under 13.00.	6.67	.11			5.27	7.53	.17	.07		6.07
11.00 but under 12.00.	3.89	.92	.07		3.14	4.84	.76			3.54
10.00 but under 11.00.	7.12	1.05	.05		5.69	9.45	.65	.17		7.67
9.00 but under 10.00.	17.23	1.41	.03	.07	13.67	19.32	1.93	.84	.08	15.68
8.00 but under 9.00.	14.47	3.31	.34	.13	11.69	16.70	2.90	1.03	.12	13.73
7.00 but under 8.00.	17.81	3.31	.57	.59	14.41	13.74	5.19	1.84	1.43	11.64
6.00 but under 7.00.	11.37	9.43	3.53	1.08	10.12	8.39	9.58	7.15	.79	8.13
5.50 but under 6.00.	1.99	9.66	3.37	.19	2.71	1.43	7.58	4.02	.55	2.32
5.00 but under 5.50.	1.77	15.41	4.47	2.24	3.19	1.08	14.92	7.15	2.59	2.82
4.50 but under 5.00.	1.47	17.41	12.61	2.11	3.81	.99	16.53	14.10	4.54	3.47
4.00 but under 4.50.	.69	11.17	16.68	6.19	2.67	.66	10.04	11.68	5.52	2.49
3.50 but under 4.00.	.32	15.15	16.00	8.31	3.27	.42	14.33	16.26	13.12	3.29
3.00 but under 3.50.	.09	7.60	28.36	24.69	4.11	.28	10.21	19.37	24.48	3.46
2.50 but under 3.00.		3.06	12.06	22.72	2.16	.03	4.02	9.06	23.69	1.91
2.00 but under 2.50.		.83	5.63	20.08	1.31		.87	5.19	16.88	1.07
1.50 but under 2.00.		.14	1.80	10.45	.55		.16	1.50	5.93	.34
Under \$1.50			.14	1.15	.05		.11	.57	0.39	.06
Totals	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.

This exhibit tells the wage story of each class of persons included. Beginning with 1898 we have first, the male employees 18 years and over. Of the total number in this class 1.02 per cent. received \$25.00 per week or over, and 1.04 per cent. received \$20.00 but under \$25.00 per week. From this point the number of persons increases as the earnings decrease until the class \$9.00 but under \$10.00 is reached and included. In this class 17.23 per cent. of the total number is found. For the next class below this the per cent. was 14.47; and for the one next to this, 17.81 per cent. This is the highest number for any one class and thus marks the turning point. A sharp decrease now sets in. The next class, that for \$6.00 but under \$7.00, shows a fall to 11.37 per cent. From this the per cent. drops to 1.99 in one step, and from here the fall is gradual until the last class in which any one is found, the class \$3.00 but under \$3.50. In this case the number was less than one-tenth of one per cent. The column thus ended with a smaller per cent. than it began.

At both the highest and the lowest wages comparatively few persons were thus employed. The greatest number are thus found in the classes in the middle of the table, those where the wages ranges from \$1.00 to \$1.50 per day.

In the course thus described there is one break that will cause particular attention, and that is the low per cent. of the number in class \$8.00 but under \$9.00, when compared to the classes next before and after it. This sudden drop and equally sudden rise would seem to be almost without reason. It is well known, however, that more persons are employed at certain rates than others. For instance a greater number usually receive \$1.25 and \$1.50 per day than at any rate immediately above or below these figures. This fact very likely accounts for the above break.

For the female employes 18 years and over a similar account can be given. In this case no one was employed at wage giving a higher weekly earning than \$13.00 but under \$15.00. Of the total, the per cent. in this class was .04. In the next two classes in order, the number was less than one per cent. In the two which follow here it was between one and two per cent. In the next two it was about three and one-third per cent. in each. This brings us down to the class \$6.00 but under \$7.00 in which the number employed was 9.43 per cent. For the two next the per cent. was 9.66 and 15.41, and for the one \$4.50 but under \$5.00 it stood at 17.41. This was the highest point. An irregular downward tendency set in here and continued until the class \$1.50 but under \$2.00 in which the per cent. was .14, and below which no one was employed. Outside of the fact that the earnings are much greater in the case of males over 18 years than here, there is much similarity between courses in the two cases.

In the third column we have the facts for male employes under 18 years of age. In this case we find no one earning more than \$11.00 but under \$12.00 per week. In this class, however, there are a few persons, but very few, as their per cent. is only .07. In each of the four classes which follow the number is also small, being less than one per cent. For \$6.00 but under \$7.00 the number constituted 3.53 per cent. of the total. From this point the course varies, rising intermittently until, in class \$3.00 but under \$3.50, it turned at 28.36 per cent. A decrease

set in at this turn which continued all the way down to and including the last class in which the per cent. was .14.

Among the female employees under 18 years none earned more than to come in the class \$9.00 but under \$10.00, and those in this class were few, being only .07 per cent. In the three classes next in order the percentage slowly increased. Then there was a set back, and again an increase which continued down to and including the class \$3.00 but under \$3.50, in which the per cent. had suddenly risen from 8.31 in the one preceding it to 24.69. This was again the highest point, though in the two classes that follow the high level is fairly maintained. Then there is a sudden drop of about 10 per cent., or from 20.08 per cent. to 10.45 per cent. The last class shows a number amounting to 1.15 per cent.

Having considered each class separately we now come to the last column in the table for 1898,—that which includes all employees. In this column we find all wage classes represented. For the highest and lowest earnings the proportion is, of course, small. Of the total number of persons employed in 1898 during week when the greatest number were employed, .81 per cent. earned \$25.00 per week or over. Down the column, as the wage classes grow lower, the number of persons in each one of them increases. Up to the class \$10.00 but under \$11.00 this increase was not very great, the class in question shows only 5.69 per cent. The next class in order, that for \$9.00 but under \$10.00, shows 13.67 per cent. This was a big jump. As in the case of males 18 years or over the next class, \$8.00 but under \$9.00, shows a decrease from the one preceding it, and for the same reasons. In \$7.00 but under \$8.00, the next in order, the decrease of the previous class was wiped out, the per cent. here being 14.41, or the highest in this column. In the next class down, it had dropped to 10.12 per cent. and again to 2.71 per cent. in class \$5.50 but under \$6.00. From this point down the percentage remains at a low though fluctuating level, gradually dwindling until in "Under \$1.50" it is only .05 per cent.

The classified weekly earnings for 1898 have thus been explained at some length. The treatment thus accorded to the facts for 1898 could also be extended to those for 1899. This,

however, is hardly necessary. The course for the two years is very much the same, so much so, that, but for the fact that earnings in 1899 are, as a whole, somewhat greater, one explanation might do for both. In taking up the table for 1899, therefore, attention will be called to a few of the more important points only.

In the column for male persons 18 years or over we find that the highest weekly earnings was \$25.00 or over, and the lowest \$2.50 but under \$3.00. The proportion in both the highest and lowest classes, however, is extremely small, especially is this true of those in the lowest. The greatest number of persons in any class is that opposite \$9.00 but under \$10.00. Down to this point the per cent. gradually increased as the earnings decreased. Below this, the highest point, the per cent. of persons decreased with the decrease in earnings.

The weekly earnings for females 18 years or over ranged from "\$20.00 but under \$25.00" to "Under \$1.50." For a number of the higher as well as the lower classes, however, the per cent. of persons of the total is extremely small. The highest per cent., 16.53, is found for the class \$4.50 but under \$5.00. Even a glance at the columns for males and females over 18 years shows that the earnings of the latter are much the lowest.

The range of the earnings for males under 18 years is from \$13.00 but under \$15.00 to under \$1.50 per week. For the higher wage classes, however, their number is very small. The highest per cent. of the total in this class is found opposite \$3.00 but under \$4.00.

For females under 18 years the range is between \$9.00 but under \$10.00, down to and including the lowest class. As for males under 18 the highest per cent. of persons is in \$3.00 but under \$3.50, but those who earn less than this are quite numerous. The exhibit makes it plain that the earnings for females under 18 years were much lower than the earnings of the males under this age.

Of the total persons employed in 1899, as in the preceding year, all classes of earnings in the table from the highest to the lowest are covered. For both the highest and the lowest the percentage is small. Down through the column the per cent. of persons grows steadily greater until the class \$9.00 but under

\$10.00 is reached. This class includes the greatest number, or 15.68 per cent. of the total. It is also the turning point. For from this down the per cent. of persons in each class is rapidly growing smaller until it is reduced to almost nothing in the lowest and last class.

For further comparison and analysis, the facts thus described have been so rearranged and presented in the following exhibit as to show, for each year, the per cent. of persons who received \$9.00 and over; \$7.00 and over; \$6.00 and over; \$4.50 and over; \$3.00 and over per week, and under \$3.00 per week, respectively:

Comparison of earnings.

CLASSIFICATION.	1898.						1899.					
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Total.		Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Total.	
	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.		P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.
\$9.00 and over per week.	50.02	3.53	.15	.07	39.95		56.28	3.56	1.14	.08	45.41	
7.00 and over per week.	82.30	10.15	1.36	.79	66.05		86.72	11.65	4.01	1.58	70.78	
6.00 and over per week.	93.67	19.58	4.89	1.87	76.17		95.11	21.23	11.16	2.37	78.91	
4.50 and over per week.	98.90	62.06	25.34	6.41	85.88		98.61	60.28	36.43	9.99	87.38	
3.00 and over per week.	100.00	95.98	80.38	46.60	95.93		99.97	94.84	83.74	53.17	96.62	
Under \$3.00 per week....	.....	4.02	19.62	54.40	4.07		.08	5.16	16.26	46.83	3.38	

This exhibit gives a much better idea of what the income for those in each class of employes amounted to during the period covered than the preceding exhibit. Taking the totals for each year we find that in 1898, 39.95 per cent. of the total number employed received \$9.00 or over per week, and that in 1899, 45.41 per cent. earned \$9.00 or over per week. This relation certainly indicates an increase in the earnings for the latter year. This increase also seems maintained in other classifications of earnings as given. Thus it is seen that 66.05 and 70.78 per cent. received \$7.00 and over; that 76.17 and 78.91 per cent. received \$6.00 and over; that 85.88 and 87.38 per cent. received \$4.50 and over; that 95.93 and 96.62 per cent. received \$3.00 and over per week; and that 4.07 and 3.38 per cent. received less than \$3.00 per week, respectively, for the two years.

In looking over this exhibit as a whole it will be noticed that this increase in earnings mostly affected the male employes only.

Per cent. of males and females 18 years and over and under 18 years, of the total persons in each wage class.

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.
	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.
\$25.00 per wk. and over.	100.	.....	.....	.....	100.	100.	.....	.....	.....	100.
20.00 but under \$25.00	100.	.....	.....	.....	100.	99.89	.11	.....	.....	100.
18.00 but under 20.00	100.	.....	.....	.....	100.	99.92	.08	.....	.....	100.
15.00 but under 18.00	100.	.....	.....	.....	100.	99.97	.03	.....	.....	100.
13.00 but under 15.00	99.88	.12	.....	.....	100.	99.72	.19	.09	.....	100.
12.00 but under 13.00	99.81	.19	.....	.....	100.	99.65	.26	.09	.....	100.
11.00 but under 12.00	97.19	2.61	.20	.....	100.	98.12	1.88	.....	.....	100.
10.00 but under 11.00	98.28	1.65	.07	.....	100.	99.09	.74	.17	.....	100.
9.00 but under 10.00	99.06	.92	.01	.01	100.	98.53	1.06	.39	.....	100.
8.00 but under 9.00	97.20	2.61	.25	.04	100.	97.55	1.87	.55	.03	100.
7.00 but under 8.00	97.27	2.04	.53	.16	100.	94.43	8.94	1.19	.44	100.
6.00 but under 7.00	88.29	8.28	3.04	.39	100.	82.64	10.39	6.62	.35	100.
5.50 but under 6.00	57.37	31.60	10.80	.23	100.	53.49	31.88	14.19	.94	100.
5.00 but under 5.50	42.51	42.70	12.18	2.61	100.	30.77	46.84	19.11	3.28	100.
4.50 but under 5.00	29.12	40.00	28.82	2.06	100.	22.79	41.93	30.52	4.76	100.
4.00 but under 4.50	19.62	37.08	34.76	8.59	100.	21.15	35.53	35.26	8.06	100.
3.50 but under 4.00	7.17	40.94	42.48	9.41	100.	9.97	38.36	37.12	14.55	100.
3.00 but under 3.50	1.24	16.40	66.05	22.31	100.	6.49	25.97	41.96	25.64	100.
2.50 but under 3.00	.017	12.54	48.39	38.90	100.	1.15	18.45	36.51	44.89	100.
2.00 but under 2.50	.....	5.69	37.44	56.87	100.	.21	7.11	35.84	56.84	100.
1.50 but under 2.00	.....	2.41	28.07	69.52	100.	.33	3.83	33.01	62.78	100.
Under \$1.50	.....	.....	22.23	77.77	100.	.....	15.25	66.10	18.65	100.
Totals	78.84	8.85	8.61	3.70	100.	80.03	8.83	7.52	3.63	100.

The preceding exhibit deals with the per cent. of persons as classified, of the total number in each wage class. In 1898, classes \$25.00 and over to \$15.00 but under \$18.00 included only male wage earners who were 18 years or over. Their proportion, therefore, had to be indicated by the full number, or 100. In class \$13.00 but under \$15.00, 99.88 per cent. of the total number who earned this amount were males and .12 were females over 18 years. From this point there is a constant decrease in the per cent. of males 18 and over, and an increase in the per cent. for other classes of persons. The first class in which persons of all classes are represented is in \$9.00 but under \$10.00. The representation there for others than males 18 and over is very small. As a matter of fact, few persons outside of this class earned that much per week. In the different wage classes, the females 18 and over do not become heavily represented until \$4.50 but under \$5.00; the males under 18 not un-

til in the same class, and the females under 18 not until in \$3.00 but under \$3.50. In 1899 the relations are much the same as in 1898. A few variations may be noticed, but these are easily seen.

In the foregoing pages under this head we have shown the classified weekly earnings of all persons included, when classified as to both sex and age. The age classification used in this case differs somewhat from that commonly used in reports of this kind. In cases, therefore, when it is desired to compare the data for this state with that of other states the age classification mentioned will necessarily cause some inconvenience. In order to avoid this inconvenience, or to make comparisons easier, it was thought that it would be a good plan to omit the age classification altogether, and show the classified weekly earnings of all the persons included, when classified as to males and females only, regardless of age. This was carried into effect, and the results are presented in the four exhibits which follow. Regarding these exhibits it should perhaps be said that they greatly resemble the four preceding ones, and that they are presented on the same general plan. The first one in order shows the male, female, and total persons in 1898 who received classified weekly earnings.

Total persons receiving classified weekly earnings.

CLASSIFICATION.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
\$25.00 per wk. and over.....	655	.....	655	750	.....	750
20.00 but under \$25.00.....	963	.....	963	906	1	907
18.00 but under 20.00.....	1,163	.....	1,163	1,306	1	1,306
17.00 but under 18.00.....	3,642	.....	3,642	4,133	1	4,134
15.00 but under 17.00.....	3,531	4	3,535	4,136	8	4,144
12.00 but under 15.00.....	4,283	8	4,291	5,475	14	5,489
11.00 but under 12.00.....	2,500	67	2,567	3,135	60	3,195
10.00 but under 11.00.....	4,574	77	4,651	6,865	51	6,916
9.00 but under 10.00.....	11,076	104	11,180	13,991	153	14,144
8.00 but under 9.00.....	9,320	244	9,564	12,122	235	12,357
7.00 but under 8.00.....	11,523	259	11,782	10,042	460	10,502
6.00 but under 7.00.....	7,559	718	8,277	6,546	788	7,334
5.50 but under 6.00.....	1,506	704	2,212	1,298	620	1,918
5.00 but under 5.50.....	1,428	1,183	2,611	1,263	1,269	2,532
4.50 but under 5.00.....	1,803	1,309	3,112	1,670	1,463	3,133
4.00 but under 4.50.....	1,139	998	2,137	1,267	979	2,246
3.50 but under 4.00.....	1,330	1,349	2,679	1,396	1,571	2,967
3.00 but under 3.50.....	2,058	1,299	3,357	1,518	1,614	3,132
2.50 but under 3.00.....	860	911	1,771	634	1,085	1,719
2.00 but under 2.50.....	401	670	1,071	350	621	971
1.50 but under 2.00.....	128	328	456	103	206	309
Under \$1.50.....	10	35	45	39	20	59
Totals.....	71,504	10,267	81,771	78,941	11,230	90,171
Per Cent.	87.44	12.56	100.	87.54	12.46	100.

In the above exhibit both the persons employed and their earnings are fully classified. The classification for the persons employed is, as said, that for males and females, showing the total for both. The classification of earnings runs from \$25.00 and over per week down to less than \$1.50 per week, including in this range twenty-two distinct wage classes. At the earnings, as denoted in each of these classes, a certain number of persons were employed. Thus, for instance, we find that in the class \$9.00 but under \$10.00, 11,076 males and 104 females, or a total of 11,180 persons were employed in 1898, and that 13,991 males and 153 females, or a total of 14,144 persons, were employed in 1899. It is interesting to note the number of persons in each wage class, to study their relation to each other, and to make comparisons for the two years. In order to facilitate this the per cent. of the persons in each wage class of the totals, both when read down and across the page, have been ascertained and presented in the following exhibits:

The first in order of these exhibits shows the per cent. of the respective number of males, females, and total for both, in each wage class, of their respective totals.

Showing of the total persons in each case, the per cent. of the males, females, and total for both in each wage class.

CLASSIFICATION.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
\$25.00 per wk. and over.....	.91	.....	.80	.96	.....	.84
20.00 but under \$25.00.....	1.35	.....	1.17	1.14	.....	1.00
18.00 but under 20.00.....	1.63	.....	1.42	1.65	.....	1.45
15.00 but under 18.00.....	5.09	.....	4.45	5.23	.....	4.58
13.00 but under 15.00.....	4.94	.03	4.32	5.23	.07	4.59
12.00 but under 13.00.....	5.99	.06	5.24	6.93	.13	6.09
11.00 but under 12.00.....	3.50	.65	3.14	3.97	.54	3.54
10.00 but under 11.00.....	6.39	.75	5.69	8.69	.46	7.63
9.00 but under 10.00.....	15.49	1.01	13.68	17.72	1.37	15.69
8.00 but under 9.00.....	13.04	2.37	11.69	15.37	2.09	13.70
7.00 but under 8.00.....	16.12	2.52	14.40	12.73	4.09	11.65
6.00 but under 7.00.....	10.58	6.99	10.13	8.29	7.02	8.14
5.50 but under 6.00.....	2.11	6.85	2.71	1.65	5.53	2.13
5.00 but under 5.50.....	1.99	11.63	3.19	1.60	11.30	2.80
4.50 but under 5.00.....	2.53	12.76	3.81	2.13	13.03	3.43
4.00 but under 4.50.....	1.67	9.73	2.68	1.61	8.72	2.49
3.50 but under 4.00.....	1.86	13.15	3.23	1.78	13.98	3.29
3.00 but under 3.50.....	2.87	12.66	4.11	1.92	14.37	3.47
2.50 but under 3.00.....	1.20	8.87	2.17	.80	9.76	1.92
2.00 but under 2.50.....	.66	6.53	1.32	.46	5.54	1.07
1.50 but under 2.00.....	.17	3.19	.55	.13	1.32	.34
Under \$1.50.....	.01	.35	.05	.04	.18	.06
Totals	100.	100.	100.	100.	100.	100.

The above exhibit shows the per cent. for both males and females and their total in 1898 and 1899. Considering the males in 1898 first, we find that, of the total, less than one per cent. received \$25.00 per week or over. In the higher classes the proportion is very small. Not until in the fourth class from the top, that of \$15.00 but under \$18.00, does the number reach five per cent. Nor is there much of an increase until for \$9.00 but under \$10.00. In this wage class we find 15.49 per cent. of the males. For the four classes which follow a comparatively high per cent. is kept up, the highest being 16.12. In class \$5.50 but under \$6.00 there is a sudden drop to 2.11 per cent., and from this down the per cent. remains at a low point, dwindling into practically nothing in the last few classes.

Among the females in 1898 no one is found earning more than \$13.00 but under \$15.00 per week, and the per cent. who received this was extremely small. In fact, the per cent. being only two and one-half in any class above \$6.00 but under \$7.00. In this class it reached 6.99. In \$5.00 but under \$5.50 there were 11.53 per cent. In the five classes which follow, it remains in the neighborhood of this level. Then the decline is sharp until the foot of the column.

Coming now to the total in 1898 it is seen that of the total number employed only .80 per cent. were found in the class \$25.00 and over. In the next two, the range is between one and two per cent. In the fourth, the number rises to 4.45 per cent. Until the class \$9.00 but under \$10.00 is reached, the per cent. does not exceed 5.69. In this class, however, the number constituted 13.68 per cent. of the total, and for the three succeeding classes the number remains above 10 per cent. Then there is a sharp drop to 2.71 per cent. In the classes below this the per cent. is small, and, with a few exceptions, growing smaller with the class.

The per cent. and course for 1899 follow that for 1898 very closely. The only difference of importance noticeable is that, on the whole, the earnings in 1899 were somewhat greater than in 1898.

In the next exhibit we find another classification of earnings,—a classification that will make comparisons in earnings, as between the two years, still more easy.

Per cent. of males and females of the total number in each wage class.

CLASSIFICATION.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
\$9.00 and over per week...	45.29	2.50	39.91	51.51	2.57	45.46
7.00 and over per week...	74.45	7.39	66.00	79.61	8.75	70.81
6.00 and over per week...	85.03	14.38	76.13	87.90	15.77	78.95
4.50 and over per week...	91.66	45.52	85.84	93.27	45.63	87.56
2.00 and over per week...	98.06	81.06	95.91	98.58	82.70	96.61
Under \$3.00 per week.....	1.94	18.94	4.09	1.42	17.30	3.39

Comparing the figures of the totals in 1898 and 1899, as shown in the above exhibit, many interesting facts are developed. Thus, for instance, we see that in the former year 39.91 per cent. of the persons employed received \$9.00 per week and over, and that in the latter year 45.46 per cent. received this amount and over. The number who earned \$1.50 per day and over was thus 5.61 per cent. greater in 1899 than in the preceding year. This indicates a very substantial increase in wages during the past year. It is also seen that, for the two years in order, 66.00 and 70.81 per cent. received \$7.00 and over; that 76.13 and 78.95 received \$6.00 and over; that 85.84 and 87.36 per cent. received \$4.50 and over; that 95.91 and 96.61 per cent. received \$3.00 and over, and that 4.09 and 3.39 per cent. received less than three dollars per week. In all of these figures a greater earning in 1899 than in the preceding year is plainly seen.

Showing the total persons in each case, the per cent. of the males, females, and the total for both in each wage class.

CLASSIFICATION.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
\$25.00 per wk. and over.....	100.	.....	100.	100.	.....	100.
20.00 but under \$25.00.....	100.	.....	100.	99.89	.11	100.
18.00 but under 20.00.....	100.	.....	100.	99.92	.08	100.
15.00 but under 18.00.....	100.	.....	100.	99.97	.03	100.
13.00 but under 15.00.....	99.89	.12	100.	99.81	.19	100.
12.00 but under 13.00.....	99.81	.19	100.	99.73	.27	100.
11.00 but under 12.00.....	97.39	2.61	100.	98.12	1.88	100.
10.00 but under 11.00.....	98.34	1.66	100.	99.26	.74	100.
9.00 but under 10.00.....	99.07	0.93	100.	98.92	1.08	100.
8.00 but under 9.00.....	97.45	2.55	100.	98.09	1.91	100.
7.00 but under 8.00.....	97.81	2.19	100.	96.62	3.38	100.
6.00 but under 7.00.....	91.32	8.68	100.	89.26	10.74	100.
5.50 but under 6.00.....	68.17	31.83	100.	67.67	32.33	100.
5.00 but under 5.50.....	54.69	45.31	100.	49.88	50.12	100.
4.50 but under 5.00.....	57.94	42.06	100.	53.33	46.67	100.
4.00 but under 4.50.....	54.37	45.63	100.	56.41	43.59	100.
3.50 but under 4.00.....	49.64	50.36	100.	47.09	52.91	100.
3.00 but under 3.50.....	61.31	38.69	100.	48.38	51.62	100.
2.50 but under 3.00.....	48.56	51.44	100.	36.66	63.34	100.
2.00 but under 2.50.....	37.44	62.56	100.	36.06	63.94	100.
1.50 but under 2.00.....	28.07	71.93	100.	33.33	66.67	100.
Under \$1.50.....	22.22	77.78	100.	66.10	33.90	100.
Totals	87.44	12.56	100.	87.54	12.46	100.

The above exhibit shows the per cent. of the males and females in each wage class of the total number of persons in the class. As the knowledge of the relation, as to number, of the two sexes is of importance in all wage studies, the exhibit is certainly full of interest. Of the total number, the females do not constitute a very large proportion, being only 12.56 per cent. in 1898 and 12.46 per cent. in 1899. In some classes, however, the females predominate, particularly in those where the earnings are low. The first class that shows more women than men is that of \$3.50 but under \$4.00, in 1898, and \$5.00 but under \$5.50, in 1899. Of the twenty-two classes included, five show more women than men in the former year, while six makes this showing for the latter year. While the increase in earnings in 1899 is more pronounced for males than for females, the upward tendency for the latter can also be traced.

Average yearly earnings, by industries, 1898 and 1899.

INDUSTRIES.	Number of establishments.	AVERAGE YEARLY EARNINGS.		INCREASE (+) OR DECREASE (—) IN 1899.	
		1898.	1899.	Amount.	Per cent.
Agricultural implements	26	\$525 06	\$499 30	—\$25 76	— 6.81
Artisans' tools and hardware specialties	9	358 54	377 28	+ 18 74	+ 5.32
Bicycles, tricycles, etc.	10	459 80	473 14	+ 23 34	+ 4.95
Boots and shoes.	22	287 50	299 91	+ 12 33	+ 4.28
Boxes (wooden and paper)	27	232 57	312 64	+ 30 09	+ 10.64
Brick, tile and sewer pipe.	23	222 75	319 58	+ 3 23	— .99
Brooms, brushes, baskets, etc.	16	299 53	301 03	+ 1 50	+ .50
Burial cases, caskets, coffins, etc.	3	325 42	346 81	+ 21 39	+ 6.57
Cement, lime, plaster, etc.	9	314 36	356 88	+ 42 50	+ 13.51
Chairs	10	222 03	310 32	+ 18 27	+ 6.25
Cigars, snuff and tobacco	50	347 28	367 63	+ 20 42	+ 5.88
Clothing	13	274 58	283 70	+ 14 12	+ 5.15
Confectioneries, crackers, etc.	12	233 70	241 17	+ 8 47	+ 3.62
Cooking and heating apparatus.	5	469 81	484 40	+ 14 59	+ 3.10
Copperage	15	352 18	332 28	— 30 10	— 8.54
Cotton and linen goods	6	233 95	249 62	+ 15 67	+ 6.69
Electrical and gas apparatus and supplies	17	450 68	479 15	+ 28 47	+ 6.31
Flour and feed	65	509 41	511 53	+ 2 14	+ .42
Furniture	39	305 03	312 79	+ 7 74	+ 2.53
Furs, gloves and mittens.	9	535 06	533 61	— 1 45	— .43
Iron goods (malleable)	24	459 18	459 80	+ 62	+ .11
Knit goods	16	295 53	212 17	+ 13 61	+ 6.63
Lager beer	37	465 50	470 45	+ 4 95	+ 1.06
Leather	25	398 40	396 03	— 2 37	— .59
Lumber, lath and shingles	124	397 77	410 21	+ 12 44	+ 3.12
Malt	16	563 31	570 83	+ 8 52	+ 1.51
Machines and machinery	84	540 43	533 90	— 6 53	— 1.20
Office and saloon fixtures, etc.	7	334 92	381 80	+ 16 88	+ 4.62
Paints, oils and crude chemicals.	5	412 61	402 58	— 10 03	— 2.43
Paper and pulp	31	397 24	397 06	— 18	— .04
Saddlery, harness, etc.	8	412 03	421 13	+ 9 04	+ 2.19
Sash, doors, blinds, etc.	58	353 48	357 78	+ 4 30	+ 1.21
Sheet metal goods	23	279 88	283 96	+ 4 10	+ 1.46
Ship and boat building	6	442 72	469 26	+ 23 61	+ 5.33
Soap, lye, potash, etc.	8	325 24	326 65	+ 1 41	+ .43
Staves and heading	15	296 54	297 85	+ 2 31	+ .78
Stone (marble, granite, etc.)	9	528 93	533 93	+ 5 00	+ .94
Toys and games	5	260 09	276 35	+ 16 26	+ 6.25
Trunks, valises, etc.	6	299 25	295 12	— 4 13	— 1.36
Veneer	7	260 97	303 84	+ 37 87	+ 9.91
Wagons, carriages and sleighs.	39	431 08	451 80	+ 19 72	+ 4.57
Woodenware	8	318 42	327 14	+ 8 72	+ 2.73
Woolen and worsted goods	16	290 43	291 08	+ 65	+ .21
All industries	992	\$338 93	\$339 14	+ \$5 19	+ 1.36

Days in operation, by industries, 1898-1899.

INDUSTRIES.	Number of establishments.	AVERAGE NUMBER OF DAYS IN OPERATION		INCREASE (+) OR DECREASE (-) IN 1899.	
		1898.	1899.	Days.	Per cent.
Agricultural implements	26	277.9	293.6	+17.7	+ .06
Artisans' tools and hardware specialties	9	294.7	293.0	+ 3.3	+ .01
Bicycles, tricycles, etc.	10	299.0	268.0	-31.0	- .10
Boots and shoes	22	282.2	236.3	+ 4.4	+ .01
Boxes (wooden and paper)	27	296.0	290.0	.....	.....
Brick, tile and sewer pipe	23	142.5	168.1	+20.6	+ .14
Brooms, brushes, etc.	16	236.4	252.6	+13.8	+ .05
Burial cases, caskets, coffins, etc.	8	231.7	255.6	+13.9	+ .04
Cement, lime, plaster, etc.	9	291.3	300.4	+ 9.1	+ .03
Chairs.	10	295.2	279.1	-16.1	- .05
Cigars, snuff and tobacco	50	237.5	295.4	+ 7.9	+ .02
Clothing.	13	235.5	295.0	+ 9.5	+ .03
Confectioneries, crackers, etc.	12	248.9	299.1	+ 9.2	+ .00
Cooking and heating apparatus.	5	297.8	299.6	+ 1.2	+ .00
Cooperage	15	266.6	269.4	+ 2.8	+ .01
Cotton and linen goods	6	304.5	303.3	- 1.2	- .00
Electrical and gas apparatus and supplies.	13	293.1	231.0	-17.1	- .05
Flour and feed	65	253.1	282.5	+ 29.4	+ .00
Furniture.	38	290.3	234.4	+ 4.1	+ .01
Furs, gloves and mittens	9	293.6	294.3	+ .6	+ .00
Iron goods (mal cable)	24	234.2	237.6	+ 3.4	+ .01
Knit goods.	16	233.9	247.2	+ 13.3	+ .01
Lager beer.	57	293.2	308.9	+10.7	+ .03
Leather.	25	287.2	296.0	+ 8.8	+ .03
Lumber, lath and shingles.	134	184.0	212.8	+28.8	+ .13
Malt.	16	280.8	299.0	+18.2	+ .06
Machines and machinery	84	291.6	297.0	+ 5.4	+ .01
Office and saloon fixtures, etc.	7	297.7	301.0	+ 3.3	+ .01
Paints, oils and crude chemicals	5	233.2	232.0	- 1.2	- .00
Paper and pulp	31	291.3	302.6	+10.3	+ .01
Saddlery, harness, etc.	8	293.5	296.3	+ 2.8	+ .01
Sash, doors and blinds	58	261.0	269.8	+ 8.8	+ .03
Sheet metal goods	21	290.1	287.9	- 2.2	- .00
Ship and boat building.	6	273.3	289.9	+ 16.6	+ .01
Soap, lye and potash	8	296.0	293.7	+ 2.3	+ .01
Staves and heading	15	235.1	231.6	- 3.5	- .01
Stone (granite, marble, etc.)	9	239.4	273.5	+34.3	+ .14
Toys and games	5	283.8	256.1	-27.7	- .10
Trunks and valises	6	291.5	301.5	+10.0	+ .03
Veneer.	7	270.4	272.9	+ 2.5	+ .00
Wagons, carriages and sleighs	39	293.8	296.6	+ 2.8	+ .00
Woodenware.	8	271.5	274.7	+ 3.2	+ .01
Woolen and worsted goods.	16	235.0	271.9	+36.9	+ .06
All industries.	992	278.4	281.9	+ 3.5	+ 1.26

Proportion of business done, by industries, 1898-1899.

INDUSTRIES.	Number of establishments.	AVERAGE PRO- PORTION OF BUSI- NESS - ONE.		INCREASE (+) OR DECREASE (-) IN 1899.	
		1898.	1899.	Pro- portion.	Per cent.
Agricultural implements.....	26	78.1	79.5	+ 6.4	+ 8.7
Artisans' tools and hardware specialties...	9	82.1	87.1	+ 5.0	+ .6
Bicycles, tricycles, etc.....	10	75.6	87.5	- 3.1	- 10.7
Boots and shoes.....	22	83.1	85.0	+ 4.8	+ 6.1
Boxes (wooden and paper).....	27	72.7	82.7	+ 10.0	+ 1.3
Brick, tile and sewer pipe.....	21	60.5	63.7	+ 3.1	+ 5.0
Brooms, brushes, baskets, etc.....	16	78.3	93.4	+ 15.1	+ 19.2
Burial cases, caskets, coffins, etc.....	3	70.0	83.3	+ 13.3	+ 19.0
Cement, lime, plaster, etc.....	9	80.5	89.4	+ 8.9	+ 11.1
Hairs.....	10	83.7	84.0	+ .3	+ .3
Cigars, snuff and tobacco.....	50	78.2	89.4	+ 8.2	+ 10.4
Clothing.....	13	74.4	78.2	+ 3.8	+ 5.1
Confectioneries, crackers, etc.....	12	65.3	68.4	+ 3.1	+ 4.7
Cooking and heating apparatus.....	5	89.0	92.0	+ 3.0	+ 3.3
Copperage.....	15	71.8	72.3	+ .5	+ .6
Cotton and linen goods.....	6	85.0	87.6	+ 2.6	+ 3.0
Electrical and gas apparatus and supplies..	17	83.2	88.0	+ 4.7	+ 5.7
Flour and feed.....	63	86.2	78.4	- 7.8	- 9.0
Furniture.....	33	75.0	80.0	+ 4.9	+ 6.5
Furs, gloves and mittens.....	9	81.4	86.1	+ 4.7	+ 5.7
Iron goods (malleable).....	24	77.0	81.6	+ 4.6	+ 5.9
Knit goods.....	16	83.1	91.1	+ 8.0	+ 9.6
Lager beer.....	57	66.8	69.2	+ 2.4	+ 3.5
Leather.....	25	75.8	80.1	+ 4.3	+ 5.6
Lumber, lath and shingles.....	124	72.0	79.6	+ 7.6	+ 10.5
Malt.....	16	82.5	85.7	+ 3.2	+ 3.8
Machines and machinery.....	84	68.4	77.9	+ 9.5	+ 13.8
Office and saloon fixtures, etc.....	7	74.0	84.0	+ 9.0	+ 12.1
P. int., oils and crude chemicals.....	6	69.6	79.0	+ 9.4	+ 13.5
Paper and pulp.....	31	84.1	89.1	+ 5.0	+ .5
Saddlery, harness, etc.....	8	71.2	82.5	+ 11.3	+ 15.8
Sash, doors, blinds, etc.....	58	88.9	92.9	+ 4.9	+ 5.6
Sheet metal goods.....	23	67.0	76.6	+ 9.6	+ 14.4
Ship and boat building.....	6	84.1	74.1	- 10.0	- 1.1
Soap, lye, potash, etc.....	8	72.5	76.8	+ 3.8	+ 5.2
Staves and heading.....	15	71.0	78.0	+ 7.0	+ 9.8
Stone (marble, granite, etc.).....	9	82.3	64.4	+ 12.1	+ 23.1
Toys and games.....	5	76.6	80.0	+ 3.4	+ 4.4
Trunks, valises, etc.....	6	84.1	95.8	+ 11.7	+ 13.9
Veneer.....	7	69.8	80.9	+ 11.0	+ 1.5
Wagons, carriages and sleighs.....	39	74.8	79.6	+ 4.8	+ 6.4
Wood-ware.....	8	81.8	84.3	+ 2.5	+ 3.0
Woolen and worsted goods.....	16	80.2	77.9	- 2.3	- 2.8
All industries.....	992	75.6	81.2	+ 5.6	+ 7.37

The preceding three tables show, respectively, for each industry and for all industries the average yearly earnings, the average number of days in operation, and the average proportion of business done in 1898 and 1899. The facts presented in these tables are both interesting and of some value. In the first place they tend to confirm what has already been said or presented. Then again they throw a great deal of light upon the condition directly or when standing alone.

AVERAGE YEARLY EARNINGS.

The table showing the average yearly earnings of the mechanics, operatives, and workers in the various industries in 1898 and 1899 is the first in order. What is here called the average yearly earnings was arrived at by dividing the total amount paid as wages each year by the average number of persons employed. What is really shown, therefore, is the average amount to a certain number of positions constantly filled and not the amount that was actually received by each person during the year. As we know, the yearly working time of each person varies greatly. While some are constantly employed, others are idle for at least a part of the time each year, and when idle they, of course, earn nothing.

The following exhibit shows the average yearly earnings in all industries for 1898 and 1899:

Year.	Amount.
Average yearly earnings in 1898	\$383 95
Average yearly earnings in 1899	389 14
Increase for 1899	5.19
Per cent. of increase	1.35

According to these figures the average yearly earnings were \$383.95 in 1898, and \$389.14 in 1899. The increase for the latter year, or 1899, thus amounts to \$5.19, or 1.35 per cent.

While, as a whole, there is an increase in the average yearly earnings in 1899, this increase does not mean that there was also an increase for each individual industry. This is seen from the fact that of the 43 industries included, 35 show an increase in

average yearly earnings, and 8 a decrease. Those showing a decrease are Agricultural Implements; Brick, Tile and Sewer Pipe; Furs, Gloves and Mittens; Leather; Machines and Machinery; Paints Oils and Crude Chemicals; Paper and Pulp; Trunks and Valises.

As said, the above eight industries show a decrease in the average earnings in 1899 as compared with 1898. In point of persons employed and the value of goods made, a few of these industries are among the more important in the State. Some of them, while showing a decrease in average earnings, show an increase in the total wages paid and in the business done generally. These facts may seem inconsistent, but they are true. What then are the reasons for this? Does it mean a general decrease in the rate wages? Or is it possible that in the increase of workers in 1899 those in the lower grade predominated? It could have been caused in either of these ways, and the probabilities are it was caused by the latter. While the facts in this part do not furnish an absolute answer, they give a few hints. The facts in the returns seem to indicate that, at certain times during the year, an unusually large number of persons were employed in many of the industries, and that this increase consisted chiefly of cheaper labor. We know from common experience also that new and temporary hands are paid less than those permanently employed. In most factories the proportion of skilled hands to those of less skill or common labor is comparatively small. Putting all these facts together it is easy to figure out how a decrease in average earnings could have come about. Besides these there are many other facts that could have caused a lower average earnings. As said above, the earnings in this case were obtained by dividing the total amount paid by the average number of persons employed. This looks simple. As a matter of fact it is directly the contrary. To find precisely the average number employed is no easy task. The reason for this is that many establishments kept their records in such a way that the average could only be estimated. While these estimates were nearly enough correct for the purpose of ascertaining the range of employment, it is doubtful if they could be considered so for the purpose of obtaining the average earnings. In this case the number obtained was used as a divisor, and when so

used, a small change only in the number will cause a big change in the results. An increase in the number of females and children would also disturb the average earnings. In fact, so many elements enter into this question that it is doubtful whether any attempt at all ought to be made to obtain the average earnings of any class by this method. From what has been said, it is clear that no absolute reliance can be attached to this table. At any rate the facts presented in it should be used with caution, and compared only with earnings obtained in a similar manner. As to the details of the way in which the average number of persons employed were obtained, a full description has already been given.

AVERAGE NUMBER OF DAYS IN OPERATION.

The second table in order, the one under this head, shows, for the 43 industries and for all when combined, the average number of days in actual operation in 1898 and 1899 and the increase or decrease, as the case may be, in the latter year as compared to the former. These increases and decreases are shown in both number and per cent.

The average number of days in operation, by the establishments in each industry, was obtained in the following manner: Each establishment was requested to report the actual number of days it had been in operation during the year. This request was, of course, complied with. The total number of days for each industry was then ascertained by adding together the days for all the establishments. The average number of days was found by dividing the total days thus obtained by the number of establishments included. The average shown is thus the arithmetical average.

This data was obtained because of the light it throws upon the other facts in this part. In connection with these facts it must necessarily be of a great deal of significance not only to the amount of the business done but to the line of employment.

In the following exhibit is found the average number of days for all industries in 1898 and 1899, and the increase for the latter year as compared with 1898.

Year.	Days.
Average days in operation in 1898.....	278.40
Average days in operation in 1899.....	281.90
Increase in 1899.....	3.50
Per cent. of increase.....	1.26

This exhibit shows that the average number of days in operation was 278.4 in 1898, and 281.9 in 1899. Comparing the two years there is thus an increase in the latter of 3.5 days, or 1.26 per cent.

All industries, however, did not show an increase. As in business done and other respects several showed a decrease. For both those showing an increase and those showing a decrease the margin here was much more narrow than in the other elements considered. Thus there are but very few industries in which the change amounts to one per cent. either way. This fact is, of course, accounted for by the fact that the range in this element is necessarily more limited than for most of the other elements. In the questions of increase and decrease we find that 32 industries show the former and 11 the latter.

AVERAGE PROPORTION OF BUSINESS DONE.

In the third and last in order of the three preceding tables, the table headed in the above way is found for each of the industries included and for all when combined the average proportion of business done in 1898 and 1899, together with a comparison showing, as the case may be, the increase and decrease in 1899 when compared to the year preceding it.

By the proportion of business done is meant the relation which the actual output bore to the greatest capacity of the plant,—that is the capacity to turn out goods with present facilities when the greatest number of persons for whom there are accommodations are employed. This greatest capacity was considered as 100. And the business actually done was estimated in its per cent. relation or proportion of 100. That facts, such as these, are of some value needs no defense.

The following exhibit shows for all industries, in 1898 and

1899, the average proportion of business done and the increase in this proportion in 1899 as compared with 1898.

Year.	Proportion.
Proportion of business done in 1898.....	75.6
Proportion of business done in 1899.....	81.2
Increase in 1899.....	5.6
Per cent. of increase.....	7.37

From this exhibit we find that when the full capacity was indicated by 100, the proportion of the business actually done was 75.6 per cent. in 1898 and 81.2 in 1899. This is an increase of 5.6 points in the latter year, amounting to about 7.37 per cent. It appears from this that the increase in the proportion of the business is somewhat smaller than the increase in most of the other elements.

SUMMARIES.

In the foregoing pages in this part the data of their business for 1898 and 1899, as reported by the manufacturers themselves, have been presented and briefly explained. The data itself, while not as complete in all its details as that obtained by the United States Census, contain all the elements necessary for the purpose in view and, as a whole, are of the greatest importance. They cover everything that is needed in order to show what the situation is, both as regards the trend of business, and the conditions of employment and earnings. As said, the analysis of these facts has been brief,—more so than it ought to have been in order to do full justice to the facts with which it is concerned. Many important facts, however, have been brought out and explained. Those which are considered the most important are again presented in the following summaries of results.

The summaries begin with three tables. These tables deal with the capital invested, the cost value of the stock used, the total amount paid as wages, the total value of goods made, the average number of persons employed, the average number of

days in operation, and the proportion of business done. These elements are the most important among those presented in this part. They are the very elements which first and most effectively reflect changes in the industrial situation, when compared from time to time. In these three tables an effort has been made to bring the results, of the comparison of these elements for the two years, together in such a way that all the changes for each industry will appear in connection on the same line and page. The first table in order gives the actual increase or decrease in each element, in amount or number. The second table in order gives the per cent. of these changes and thus measures the relative size or importance of each change. The third table in order contains no descriptive figures, but simply indicates by a plus (+) or minus (—) sign, for each element, whether there was an increase or a decrease in the same in the latter year. In every instance in these tables the increases and decreases shown are those in 1899 as compared with 1898. In connection with what has gone before and with what follows the tables will be found very interesting as well as valuable.

Summaries of the more important results, amount and number.

INDUSTRIES.	INCREASE (+) OR DECREASE (-) IN 1899 AS COMPARED WITH 1898.					
	Capital invested.	Stock used	Total wages.	Value of goods made.	Average persons employed.	Days in operation.
Agricul. Imps.	+\$2,566,788	+\$949,888	+\$207,938	+\$1,686,117	000	+17.7
Artisans' tools, etc.	5,392	52,472	1,874	221,030	42	+13.3
Bicycles, etc.	183,832	28,554	117,834	404,896	188	-31.0
Boots and shoes.	404,976	708,812	38,474	779,639	31	+4.4
Boxes (W. and P.) ..	159,932	894,496	10,893	629,107	182	+10.0
Brick, tile, etc.	316,839	17,322	10,866	56,999	35	+20.6
Brooms, etc.	6,516	25,982	11,059	55,162	35	-13.8
Burial cases, etc.	27,876	75,010	18,061	97,147	15	+13.9
Cement, lime, etc.	29,496	229,040	45,188	496,133	98	+9.1
Chairs.	404,669	128,542	9,388	38,631	219	-16.1
Cigars, etc.	86,944	311,478	34,475	487,745	41	+7.9
Clothing.	126,227	292,804	54,581	463,038	78	+9.5
Confectionaries, etc.	16,428	218,291	48,850	491,812	169	+0.2
Cooking apparatus.	52,246	75,999	26,951	236,370	27	+1.2
Cooperage.	3,560	85,906	18,519	19,729	94	+2.8
Cotton and L. goods	14,894	32,789	4,326	30,422	11	+0.7
Electrical supplies. ..	50,225	189,596	48,442	380,123	36	-17.1
Flour and feed.	180,179	6,592,845	96,381	6,992,011	222	+0.6
Furniture.	398,459	389,395	114,950	436,243	307	+4.1
Furs, gloves, etc.	13,986	31,840	5,862	67,331	19	+0.8
Iron goods.	896,480	1,864,256	593,611	3,819,074	1,203	+3.4
Knit goods.	418,570	218,552	111,110	328,727	380	+3.8
Lager beer.	856,597	253,721	87,763	1,526,894	156	+10.7
Leather.	1,305,483	1,672,541	145,629	1,999,712	890	+8.8
Lumber, etc.	3,943,860	2,990,868	1,344,551	6,561,159	3,056	+24.8
Malt.	947,111	17,447	58,588	253,476	63	+18.2
Machinery.	1,760,491	846,493	579,186	1,959,695	1,145	+5.4
Office fixtures.	71,112	66,777	33,989	150,948	69	+3.4
Paints, oils, etc.	35,285	190,649	17,276	203,787	44	+1.2
Paper and pulp.	1,108,632	768,536	35,194	1,585,542	216	+10.8
Saddlery, etc.	17,936	94,577	11,027	110,142	22	+3.8
Sash, doors, etc.	451,240	761,191	157,957	1,016,532	409	+8.8
Sheet metal goods.	70,246	264,990	18,564	750,638	31	+2.2
Ship building, etc.	900,736	49,417	43,748	294,798	57	-3.4
Soap, lye, etc.	16,890	46,775	6,147	89,359	14	+7.7
Staves, etc.	55,013	25,372	5,541	35,268	16	+3.5
Stone.	68,561	31,789	16,099	50,724	30	+34.3
Toys and games.	51,713	3,730	7,152	1,718	9	+29.7
Trunks, etc.	977	43,875	16,232	85,014	58	+0.0
Veneer.	5,418	48,002	29,605	110,578	65	+2.5
Wagons, etc.	625,068	458,669	124,631	681,759	170	+1.4
Woodenware.	30,193	58,573	33,533	126,049	65	+3.2
Woolen and W. g'ds	18,845	4,509	3,494	31,682	14	+16.9
All industries.	+\$13,320,028	+\$8,013,179	+\$3,598,427	+\$20,433,958	8,345	+3.5

Summaries of the more important results.

Percent.

INDUSTRIES.	INCREASE (+) OR DECREASE (—) IN 1899 AS COMPARED WITH 1893.						
	Capital in- vested.	Stock used.	Total wages.	Value of goods made.	Average persons em- ployed.	Days in oper- ation.	Proportion of busi- ness done.
Agricultural implements.....	+ 23.64	+ 37.79	+ 16.54	+ 29.46	+ 25.00	+ 0.06	+ 8.7
Artisans' tools, etc.....	+ 0.84	+ 19.40	+ 5.22	+ 29.01	+ 6.11	+ 0.11	+ 0.6
Bicycles, etc.....	+ 12.78	+ 23.46	+ 90.89	+ 23.44	+ 34.16	+ 0.10	+ 10.7
Boots and shoes.....	+ 18.10	+ 34.36	+ 5.64	+ 21.57	+ 1.30	+ 0.10	+ 6.1
Boxes (wooden and paper).....	+ 9.63	+ 37.33	+ 2.74	+ 35.4	+ 13.95	.....	+ 1.3
Brick, tile, etc.....	+ 23.21	+ 19.05	+ 9.03	+ 18.49	+ 9.81	+ 0.14	+ 5.0
Brooms, etc.....	+ 5.77	+ 39.10	+ 24.94	+ 35.18	+ 23.49	+ 0.05	+ 19.2
Burial cases, etc.....	+ 4.39	+ 37.13	+ 17.07	+ 24.96	+ 4.62	+ 0.04	+ 19.0
Cement, lime, etc.....	+ 3.50	+ 91.65	+ 65.92	+ 89.79	+ 37.35	+ 0.06	+ 11.1
Chairs.....	+ 10.80	+ 11.84	+ 0.98	+ 1.41	+ 6.69	+ 0.03	+ 0.3
Cigars.....	+ 2.51	+ 23.86	+ 10.25	+ 22.07	+ 4.33	+ 0.02	+ 10.4
Clothing.....	+ 5.52	+ 14.3	+ 7.61	+ 11.32	+ 3.02	+ 0.03	+ 5.1
Confectioneries, etc.....	+ 1.59	+ 18.15	+ 22.35	+ 25.27	+ 18.07	.....	+ 4.7
Cooking apparatus.....	+ 4.98	+ 15.14	+ 5.61	+ 17.18	+ 2.65	.....	+ 3.3
Cooperage.....	+ 0.65	+ 7.10	+ 9.29	+ 2.47	+ 16.57	+ 0.01	+ 0.6
Cotton and linen goods.....	+ 1.89	+ 10.34	+ 4.03	+ 5.45	+ 2.39	+ 0.00	+ 3.0
Electrical supplies.....	+ 2.13	+ 15.86	+ 10.11	+ 17.09	+ 3.38	+ 0.05	+ 5.7
Flour and feed.....	+ 2.78	+ 33.73	+ 19.11	+ 31.40	+ 21.78	.....	+ 9.0
Furniture.....	+ 1.34	+ 24.78	+ 15.42	+ 14.69	+ 12.56	+ 0.01	+ 6.5
Furs, gloves, etc.....	+ 5.48	+ 13.49	+ 9.52	+ 17.52	+ 10.33	.....	+ 5.7
Iron goods.....	+ 20.74	+ 49.24	+ 3.50	+ 51.10	+ 34.79	+ 0.01	+ 5.9
Knit goods.....	+ 22.49	+ 23.00	+ 26.69	+ 17.24	+ 18.75	+ 0.01	+ 9.6
Lager beer.....	+ 2.42	+ 6.37	+ 6.49	+ 9.21	+ 5.37	+ 0.03	+ 3.5
Leather.....	+ 10.01	+ 18.10	+ 9.00	+ 14.77	+ 9.66	+ 0.03	+ 5.6
Lumber, etc.....	+ 11.67	+ 28.06	+ 31.20	+ 33.06	+ 29.72	+ 0.13	+ 10.5
Malt.....	+ 18.18	+ 0.63	+ 30.71	+ 6.16	+ 12.58	+ 0.06	+ 3.8
Machinery.....	+ 15.61	+ 21.36	+ 21.79	+ 30.65	+ 23.24	+ 0.01	+ 13.8
Office fixtures.....	+ 12.73	+ 25.23	+ 30.56	+ 28.77	+ 15.22	+ 0.01	+ 12.1
Paints, oils, etc.....	+ 5.27	+ 29.26	+ 48.12	+ 35.84	+ 50.57	+ 0.06	+ 12.5
Paper and pulp.....	+ 10.30	+ 16.18	+ 6.08	+ 19.61	+ 6.38	+ 0.03	+ 0.5
Saddlery, etc.....	+ 8.51	+ 39.06	+ 12.72	+ 28.24	+ 11.26	+ 0.01	+ 15.8
Sash, doors, etc.....	+ 10.23	+ 32.51	+ 16.56	+ 23.96	+ 25.16	+ 0.03	+ 5.6
Sheet metal goods.....	+ 2.53	+ 13.8	+ 3.25	+ 22.91	+ 1.71	.....	+ 14.4
Ship building, etc.....	+ 58.81	+ 18.36	+ 11.02	+ 29.39	+ 6.78	+ 0.01	+ 1.1
Soap, lye, etc.....	+ 3.21	+ 9.83	+ 10.79	+ 12.16	+ 7.96	+ 0.01	+ 5.2
Staves, etc.....	+ 13.12	+ 18.84	+ 5.57	+ 10.89	+ 4.74	+ 0.01	+ 9.8
Stone.....	+ 20.06	+ 37.96	+ 25.13	+ 30.21	+ 24.72	+ 0.14	+ 23.1
Toys and games.....	+ 15.12	+ 3.10	+ 8.66	+ 0.61	+ 3.07	+ 0.10	+ 4.4
Trunks, etc.....	+ 0.22	+ 24.77	+ 18.96	+ 20.61	+ 20.20	+ 0.02	+ 13.9
Veneer.....	+ 1.98	+ 35.49	+ 30.80	+ 29.19	+ 19.00	.....	+ 1.5
Wagons, etc.....	+ 10.85	+ 19.07	+ 11.76	+ 14.71	+ 6.91	.....	+ 6.4
Woodenware.....	+ 1.74	+ 6.89	+ 7.47	+ 7.86	+ 4.61	+ 0.01	+ 3.0
Woolen and worsted goods.....	+ 1.03	+ 0.49	+ 1.30	+ 1.99	+ 1.51	+ 0.06	+ 2.8
All industries.....	+ 7.51	+ 9.01	+ 13.88	+ 12.91	+ 12.36	+ 1.26	+ 7.37

Summaries of the more important results.

Increase (+) or decrease (-).

INDUSTRIES.	Number of estab-lishments.	INCREASE (+) OR DECREASE (-) IN 1899 AS COMPARED WITH 1898.					
		Capital in-vested.	Stock used.	Total wages.	Value of goods made.	Average persons in operation.	Proportion of business done.
Agricultural imp.....	36	+	+	+	+	+	+
Artisans' tools, etc.....	9	+	+	+	+	+	+
Bicycles, etc.....	10	+	+	+	+	+	+
Boots and shoes.....	22	+	+	+	+	+	+
Boxes (wooden and paper).....	27	+	+	+	+	+	+
Brick, tile, etc.....	23	+	+	+	+	+	+
Brooms, etc.....	16	+	+	+	+	+	+
Burial cases, etc.....	3	+	+	+	+	+	+
Cement, lime, etc.....	9	+	+	+	+	+	+
Chairs.....	19	+	+	+	+	+	+
Cigars.....	50	+	+	+	+	+	+
Clothing.....	23	+	+	+	+	+	+
Confectioneries, etc.....	12	+	+	+	+	+	+
Cooking apparatus.....	5	+	+	+	+	+	+
Cooperage.....	15	+	+	+	+	+	+
Cotton and linen goods.....	6	+	+	+	+	+	+
Electrical supplies.....	17	+	+	+	+	+	+
Flour and feed.....	65	+	+	+	+	+	+
Furniture.....	38	+	+	+	+	+	+
Furs, gloves, etc.....	9	+	+	+	+	+	+
Iron goods.....	24	+	+	+	+	+	+
Knit goods.....	16	+	+	+	+	+	+
Lager beer.....	57	+	+	+	+	+	+
Leather.....	25	+	+	+	+	+	+
Lumber, etc.....	134	+	+	+	+	+	+
Malt.....	16	+	+	+	+	+	+
Machinery.....	84	+	+	+	+	+	+
Office fixtures.....	7	+	+	+	+	+	+
Paints, oils, etc.....	5	+	+	+	+	+	+
Paper and pulp.....	31	+	+	+	+	+	+
Saddlery, etc.....	8	+	+	+	+	+	+
Sash, doors, etc.....	58	+	+	+	+	+	+
Sheet metal goods.....	23	+	+	+	+	+	+
Ship building, etc.....	6	+	+	+	+	+	+
Soap, lye, etc.....	8	+	+	+	+	+	+
Staves, etc.....	15	+	+	+	+	+	+
Stones.....	9	+	+	+	+	+	+
Toys and games.....	5	+	+	+	+	+	+
Trunks, etc.....	6	+	+	+	+	+	+
Veneer.....	7	+	+	+	+	+	+
Wagon, etc.....	39	+	+	+	+	+	+
Woodenware.....	8	+	+	+	+	+	+
Woolen and worsted goods.....	16	+	+	+	+	+	+
All industries.....	992	+	+	+	+	+	+

To attempt an analysis of the facts in the foregoing three tables under this head would seem superfluous. The tables are really an explanation in themselves. In them the most important facts among those already explained are grouped in such a way as to constitute a summary. In them the changes in the leading elements in each industry can be read or studied together. As in a picture, the facts are brought directly before the eyes. First, we have the quantity of the change. Second, the relation of the same as expressed in per cent. Third, by signs, the nature of the change. This arrangement is one of convenience. The summaries, however, are continued and the results given above will appear again in the following pages though in somewhat different connections.

Private firms and corporations and partners and stockholders.

CLASSIFICATION.	1898.	1899.	INCREASE (+), DECREASE (-) IN 1899.	
			Number.	Per cent.
Number of establishments included.....	992	992		
Number of industries covered.....	43	43		
PRIVATE FIRMS.				
Number of private firms.....	494	490	-	4
Number of partners.....	908	978	+	75
Male partners.....	868	928	+	60
Female partners.....	40	55	+	15
CORPORATIONS.				
Number of corporations.....	498	502	+	4
Number of stockholders.....	9,271	10,854	+	1,583
Male stockholders.....	7,820	8,836	+	1,016
Female stockholders.....	1,451	2,018	+	567
TOTAL.				
Total partners and stockholders.....	10,174	11,832	+	1,658

The above exhibit is concerned with the respective number of Private Firms and Corporations, and Partners and Stockholders.

As said so often, the returns covered the business for 1898 and 1899. They were obtained from 992 identical establishments each year, and classified into 43 industries.

Concerning Private Firms and Partners we find that the former decreased slightly in number in 1899, while the latter increased in 1898 as compared with 1899. The decrease in Pri-

vate Firms was small, being only 4, or .80 per cent. In the total number of partners, that is, when both male and female partners are included, the increase was from 903 to 978, a gain of 75, or 8.30 per cent. For male partners the increase was 60, or 7.00 per cent; for females, 15, or 37.50 per cent. In 1898 the female partners constituted 4.43 per cent. of the total partners; in 1899 they constituted 5.62 per cent.

Both Corporations and Stockholders increased in number in 1899 as compared with 1898. Thus we see that the corporations number 498 in 1898 and 502 in 1899. This is an increase of 4, or about .80, and offsets the decrease in private firms which was shown above. The total number of stockholders increased from 9,271 to 10,854. This is a gain of 1,583 persons, or 17.07 per cent. In the male stockholders the increase numbered 1,016 persons, or 13.00 per cent.; in the females, 567 persons, or 39.08 per cent. The female stockholders constituted 15.65 per cent. in 1898 and 18.60 per cent. in 1899, of the total number of stockholders. Both the representation and gain for females were thus greater in the case of stockholders than partners. In the total number of partners and stockholders, when these two classes of investors are combined, there was a change in number from 10,174 to 11,832, a gain of 1,658, or 16.28 per cent.

Comparison of the capital employed, stock used, amount paid as wages, and total value of goods made in 1898 and 1899.

CLASSIFICATION.	Amount 1898.	Amount 1899.	INCREASE IN 1899.	
			Amount.	Percent.
Capital invested	\$177,388,229	\$190,708,257	\$13,320,028	7.51
Stock used	88,944,925	96,968,104	8,023,179	9.01
Amount paid as wages.....	25,921,041	29,519,468	3,598,427	13.88
Value of goods made.....	158,258,747	178,692,705	20,433,958	12.91

The preceding exhibit makes it very plain that there was a substantial increase in 1899 as compared with 1898, not only in the amount of capital and stock used and wages paid but in the total value of the goods made or work done. Thus, in the capital employed, there was a change from \$177,388,229 to

\$190,708,257, an increase of \$13,320,028, or 7.51 per cent. Stock increased from \$88,944,925 to \$96,958,104 or \$8,013,179, which is a gain of 9.01 per cent. Wages changed from \$25,921,041 to \$29,519,468, a gain of \$3,598,427, or 13.88 per cent. The value of the goods made was \$158,258,747 and \$178,692,705, respectively, for the two years. There was thus an increase in the value of goods made of \$20,433,958, or 12.91 per cent. Comparing the figures in this respect we find that the greatest per cent. of increase is that for wages, and that capital shows the smallest per cent. For wages and goods made the per cent. of increase is nearly the same, the difference being less than one per cent.

Yearly and total increase in capital invested, stock used, total wages paid and value of goods made in 1896 and 1899.

Classification.	Capital, per cent. of increase.	Stock, per cent. of increase.	Wages, per cent. of increase.	Goods made, per cent. of increase.
In 1897 as compared with 1896.....	7.87	12.76	15.22	9.53
In 1898 as compared with 1897.....	4.79	14.82	10.21	13.10
In 1899 as compared with 1898.....	7.51	9.01	13.88	12.91
Total increase from 1896 to 1899, inclusive	20.17	36.59	39.28	35.54

In the above exhibit the comparisons have been carried back to 1896, the year when the collection of manufacturing statistics for yearly comparisons began. The results as shown are accurate and show the trend of business during the period.

In the capital invested or used the yearly increase from 1896 to 1899, inclusive, was in per cent. 7.87; 4.79; and 7.51. The increase in 1897 as compared with 1896 is the highest, though closely followed by that in 1899 as compared with 1898.

The increases in the cost value of the stock or material used for the years given, as compared with the year preceding in each case, were 12.76; 14.82; and 9.01.

In the amount paid as wages in 1897, 1898, and 1899, as compared with the preceding year, the respective increase was 15.22; 10.21; and 13.88 per cent.

In the value of the goods made in 1897, 1898, and 1899, as compared with the value of the year preceding we find an increase of 9.53; 13.10; and 12.91 per cent., respectively.

From these figures the conclusion seems warranted that in 1899 over 1896 the capital used had increased 20.17 per cent.; the stock used, 36.59 per cent.; the amount paid as wages had increased 39.29 per cent.; and the value of goods made, 35.54 per cent. The capital used in 1899 was thus one-fifth greater in amount than that used in 1896. The cost of stock, the amount paid as wages, and the value of the product was considerably over one-third greater in 1899 than in 1896. As said elsewhere, these conclusions are based on annual returns from identical establishments, the productive capacity of which amounts to from 60 to 70 per cent. of the productive capacity of all the establishments in the state and can therefore be regarded as reliable.

Number of persons employed each month, and monthly range of employment and unemployment:

MONTHS.	1898.			1899.		
	Total No. em- ployed.	Range of employ- ment.	Range of unem- ploy- ment.	Total No. em- ployed.	Range of employ- ment.	Range of unem- ploy- ment.
January	58,999	80.74	19.26	68,020	84.71	15.29
February	60,744	83.13	16.87	69,088	86.04	13.96
March	64,000	87.53	12.42	70,893	88.28	11.72
April	69,847	95.53	4.42	73,746	91.84	8.16
May	73,072	100.	100.	79,127	98.54	1.46
June	71,896	98.39	1.61	78,993	96.37	1.63
July	70,526	96.51	3.49	79,714	99.22	.78
August	70,305	96.21	3.79	80,296	100.	.....
September	70,818	96.61	3.39	78,845	98.19	1.81
October	70,903	96.89	3.11	78,906	98.26	1.74
November	68,305	93.47	6.53	77,928	96.92	3.08
December	64,607	88.41	11.59	75,309	93.78	6.22

The preceding exhibit shows, for 1898 and 1899, the total average number of persons employed each month, and the monthly range of employment or unemployment. In 1898 the

smallest number of persons for any month during the year were employed in January, or the first month in order. In most industries, January is usually the duller month of the year. This fact is amply confirmed by the smallness of the number thus employed. The number for January was 58,999. From this month up to and including May there was a gradual increase in the persons employed, the number for May being 73,072. This, however, was the turning point. June showed a substantial decrease, and this example was followed by July and August. In September and October there was a slight increase, but for the two last months the decrease is quite heavy. The course, then, during the year, excepting two small deviations, was from 58,999 persons in January up to 73,072 in May and then downwards to 64,607 persons. The excess of the greatest number, or those for May, over the smallest number, or those for January, was 14,073 persons; and the excess of those employed in December over those employed in January was 5,608 persons.

In 1899, also, the smallest number of persons in any month was that for January. The number for that month was, as the table shows, 68,020 persons. With one exception, that for June, which shows a decrease as compared with the preceding month, there was a gradual increase in the number from January to August when the highest point, or 80,296 persons, was reached. With the end of August a decrease set in and continued almost without a break to the end of the year, the number for December being 75,309 persons. The excess in August over January was 12,276 persons, and the excess in December over January was 7,289 persons.

By the range of employment here is meant the per cent. of the number of persons employed each month, of the number for the month when the greatest number of persons were employed. By the range of unemployment, consequently, is meant the per cent. unemployed, each month, when a smaller number than that for the highest month were employed. The month in which the greatest number were employed each year is indicated by 100 per cent. In 1898 the greatest number were employed in August. This month is therefore represented by 100. In that year the smallest number were employed in January. This

month is represented by the per cent. relation which the number for the month bore to the number employed in August, or 80.74 per cent. The range of employment for January, 1898, was thus 80.74 per cent., and the range of unemployment, 19.26 per cent., or the difference between the number employed in January and those employed in August. From January the range of unemployment gradually grows more narrow until in August when the full number were employed. From August the range grows wider until the end of the year, amounting in December to 11.59 per cent. The average range of unemployment during the year was about 8 per cent.

In 1899 the greatest number were, as said above, employed in August, and this month is therefore represented by 100. The smallest number were employed in January. As the number for January constituted 84.71 per cent. of those employed in August, the range of employment for January is represented by 84.71 per cent., and the range of unemployment by 15.29 per cent. From January the range of employment becomes smaller each month until August and then gradually wider until December, or the end of the year, when it stood at 6.22 per cent. The average range of unemployment for 1899 is about 6 per cent. For 1899 employment was thus more regular and even than in 1898.

Monthly average number of persons employed to each establishment in 1898 and 1899.

[MONTHS.]	Average No. of persons in 1898.	Average No. of persons in 1899.	INCREASE (+) DE- CREASE (-) IN 1899.	
			Number.	Per cent.
January	60	69	+ 9	+ 15.00
February	61	70	+ 9	+ 14.75
March	65	72	+ 7	+ 10.77
April	70	74	+ 4	+ 5.71
May	74	80	+ 4	+ 5.11
June	73	80	+ 7	+ 9.59
July	71	80	+ 9	+ 12.67
August	71	81	+ 10	+ 14.08
September	71	80	+ 9	+ 12.67
October	71	80	+ 9	+ 12.67
November	69	79	+ 10	+ 14.49
December	65	76	+ 11	+ 14.86
Average	68	77	+ 9	+ 13.20

We find in the above exhibit the average number of persons employed in 1898 and 1899 to each establishment included. In May, 1898, when the greatest number during that year were employed, the average to each establishment was 74 persons. In January, the same year, the average was 60, or 14 persons less. From January to May included, the average gradually increases. From May to the end of the year there is a slight decrease. In 1899, August, which is the highest month, shows an average of 81 persons. For the months which precede August the average is on the increase, and for those which follow it is on the decrease.

Smallest average, and greatest number of persons employed in 1898 and 1899.

CLASSIFICATION.	Number in 1898.	Number in 1899.	INCREASE (+) DECREASE (-) IN 1899.	
			Number.	Per cent.
Smallest number of persons employed....	55,870	64,805	+ 8,935	+ 15.99
Average number of persons employed....	67,514	75,859	+ 8,345	+ 12.36
Greatest number of persons employed.....	81,771	90,171	+ 8,400	+ 10.27
Range between smallest and average number....	11,644	11,054	- 590	- 5.07
Range between average and greatest number....	14,257	14,312	+ 55	+ 0.38
Range between smallest and greatest number	25,901	25,366	- 535	- 2.06

This exhibit shows that there was an increase in 1899 as compared with 1898 in the smallest, average, and greatest number of persons employed. In detail these changes were:

In the smallest number of persons employed there was an increase from 55,870 persons in 1898 to 64,805 persons in 1899. This increase is equivalent to 8,935 persons, or 15.99 per cent.

In the average number of persons the increase was from 67,514 to 75,859, a gain for the latter year of 8,345 persons, or 12.36 per cent.

In the greatest number the change was from 81,771 persons to 90,171, an increase in 1899 of 8,400 persons, or 10.27 per cent.

The range between the smallest and average number was narrower in 1899 than in 1898 to the extent of 590 persons, or 5.07

per cent. The range between the average and greatest number was wider in 1899, there being an increase of 55 persons, or .38 per cent. Between the smallest and greatest number the range was narrower in 1899 to the extent of 535 persons, or 2.06 per cent.

The following exhibit shows the yearly increase in the average persons employed since 1896:

Classification and year.	Per cent.
Increase in 1897 as compared with 1896.....	9.34
Increase in 1898 as compared with 1897.....	9.95
Increase in 1899 as compared with 1898.....	12.36
Total increase from 1896 to 1899 inclusive	31.65

We see here that from 1896 to 1899, inclusive, there was a steady increase from year to year in the average number of persons employed. Thus in 1897 over 1896 the increase was 9.34 per cent.; in 1898 over 1897, 9.95 per cent.; in 1899 over 1898, 12.36 per cent.; while the total increase for the period was 31.65 per cent. These figures certainly tend to confirm the business activity which has been witnessed during the past few years.

Average number of persons to each establishment at the smallest average and greatest period of employment.

CLASSIFICATION.	Average No. of persons in 1898.	Average No. of persons in 1899.	INCREASE (+) DE- CREASE (-) IN 1899.	
			Number.	Per cent.
When smallest No. of persons were employed....	56	65	+ 9	16.00
When average No. of persons were employed.....	68	77	+ 9	13.24
When greatest No. of persons were employed....	83	91	+ 8	9.64

We see from this exhibit that the average number of persons to each establishment at all periods of employment was greater in 1899 than in 1898. When the smallest number were employed, the average to each establishment was 56 in 1898 and

65 in 1899, an increase of 9 persons, or 18 per cent. When the average number were employed the average to each establishment was 68 and 77 persons, respectively, for the two years, or an increase of 9 persons. And when the greatest number were employed, the average to each was 83 and 91, an increase of 8 persons in the latter year.

Per cent. of females of the total number of persons employed at the smallest, average and greatest period of employment.

CLASSIFICATION.	1898.	1899.	INCREASE (+) DE- CREASE (-) IN 1899.	
	Per cent.	Per cent.	Per cent.	
Females when smallest No. of persons were employed ...	14.42	14.34	—	.08
Females when average No. of persons were employed....	13.48	13.12	—	.36
Females when greatest No. of persons were employed....	12.56	12.46	—	.10

This exhibit shows the per cent. of the females of the total number at the different periods of employment in 1898 and 1899. In all cases there seems to have been a decrease in females for 1899. When the smallest number were employed this decrease amounted to .08 per cent., or from 14.42 to 14.34 per cent. When the average number were employed the females constituted 13.48 and 13.12 per cent., respectively; and when the greatest number were employed, 12.56 and 12.46 per cent., respectively, for the two years.

Number and per cent. of persons employed by the hour, day and piece in 1898 and 1899.

CLASSIFICATION.	1898.		1899.	
	Number.	Per cent.	Number.	Per cent.
Persons employed by the hour.....	17,728	21.68	20,971	23.26
Persons employed by the day.....	49,441	60.46	54,313	60.23
Persons employed by the piece.....	14,602	17.86	14,887	16.51
Totals	81,771	100.00	90,171	100.00

In this exhibit is seen that 21.68 and 23.26 per cent., respectively, in 1898 and 1899, were employed by the hour; that 60.46 and 60.23 per cent., respectively, were employed by the day; and that 17.86 and 16.51, respectively, in the two years were employed by the piece. In those employed by the hour there was thus an increase in 1899, while for those employed by the day and piece there was a corresponding decrease.

Total number of persons receiving classified weekly earnings; and the per cent. of same of the number in each class.

CLASSIFICATION OF WEEKLY EARNINGS.	1898 TOTAL PERSONS.		1899. TOTAL PERSONS.	
	Number.	Per cent.	Number.	Per cent.
Under \$5.00 per week	14,678	17.95	14,543	16.13
\$5.00 but under \$6.00.....	4,823	5.89	4,450	4.94
6.00 but under 7.00.....	8,277	10.12	7,334	8.14
7.00 but under 8.00.....	11,782	14.40	10,503	11.64
8.00 but under 9.00.....	9,564	11.69	12,357	13.70
9.00 but under 10.00.....	11,180	13.68	14,144	15.69
10.00 but under 12.00.....	7,218	8.83	10,111	11.22
12.00 but under 15.00.....	7,826	9.53	9,636	10.63
15.00 but under 20.00.....	4,805	5.88	5,438	6.03
20.00 and over.....	1,618	1.98	1,656	1.83
Totals	81,771	100.00	90,171	100.00

The above exhibit shows the classification of weekly earnings, the total number and per cent. of persons in each class, and the total number of persons of all classes for 1898 and 1899, or the two years covered. It should be noted in connection with this exhibit that it differs considerably from the ones dealing with the same matters which precede it. In the first place it includes only the total number, separate presentations for males and females having been omitted. Then again the classes of earnings have been reduced in number. The former were left out because less essential in a summary, the latter largely for the same reason, and also in order that the presentation would correspond to those in the United States census which, for comparative purposes, is highly desirable. The exhibit shows quite plainly the

course of wages during the two years and thus indicates the general tendency. In 1898, 32,647 persons earned \$9.00 per week and over. In 1899, 40,985 persons earned \$9.00 per week and over. This is certainly a hopeful tendency.

Comparisons of classified weekly earnings in 1898 and 1899.

Classification.	1898.	1899.
	Per cent.	Per cent.
Receiving \$9.00 or over per week.....	39.91	45.46
Receiving \$7.00 or over per week.....	66.00	70.81
Receiving \$5.00 or over per week.....	82.05	83.89
Receiving less than \$5.00 per week.....	17.95	16.11

In the above exhibit, better than in the one preceding it, do we find the tendency of earnings during the period. Thus in 1898, 39.91 per cent. received \$9.00 per week and over, while in 1899, the per cent. had moved upwards to the point of 45.46, a raise of 5.55 per cent. For the same years those who earned \$7.00 per week and over constituted 66.00 and 70.81 per cent.; and those who earned \$5.00 per week and over, 82.05 and 83.89 per cent. respectively. Next we have those who received less than \$5.00 per week, and their per cent. was 17.95 for 1898, and 16.11 for 1899. The upward tendency in 1899 was thus felt in every class.

Average yearly earnings, days in operation, and proportion of business done in 1898 and 1899.

CLASSIFICATION.	1898.	1899.	INCREASE (+). DECREASE (-). IN 1899.	
	Am'ts.	Am'ts.	Am'ts.	Per cent.
Average yearly earnings.....	\$383.95	\$389.14	+ \$5.19	+ 1.35
Average days in operation.....	278.40	281.90	+ 3.05	+ 1.26
Average proportion of business done.....	75.60	81.20	+5.60	+ 7.37

This exhibit shows an increase in the yearly earnings, days in operation, and proportion of business done. The average yearly earnings was \$383.95 in 1898, and \$389.14 in 1899, an in-

crease of \$519, or 1.35 per cent. The average number of days in operation was 278.4 in 1898, and 281.9 in 1899, an increase of 3.05 days, or 1.26 per cent. The average proportion of business done was 75.6 in 1898, and 81.2 in 1899, an increase of 5.6, or 7.37 per cent.

Comparisons of yearly earnings, days in operation, and proportion of business done from 1896 to 1899 inclusive when 992 establishments in 34 industries are included.

YEARS COMPARED.	YEARLY EARNINGS.		DAYS IN OPERATION.		PROPORTION OF BUSINESS.	
	Amount.	Per cent. of increase.	Number	Per cent. of increase.	Proportion.	Per cent. of increase.
In 1896	\$367.10	.....	263.40	.....	69.53	.....
In 1897	378.60	3.13	270.81	2.81	71.80	3.26
In 1898	383.95	1.35	278.40	2.88	75.60	5.35
In 1899	389.14	1.35	281.90	1.26	81.20	7.37
Increase in 1899 over 1896.....	22.04	6.00	18.50	7.00	11.67	16.80

This exhibit covers 43 industries from 1896 to 1899 inclusive. It shows that the average yearly earnings increased during this period, from \$367.10 to \$389.14, a gain of \$22.04, or 6.00 per cent.; that the average days in operation increased from 263.4 to 281.9, a gain of 18.5 days, or 7 per cent.; that the proportion of business done increased from 69.53 to 81.20, a gain of 11.67 points, or 16.8 per cent.

As the exhibit indicates, most of the facts contained in it relate to 992 establishments classified into 43 industries, or the establishments included in the foregoing study. The data showing the average yearly earnings in 1896 and 1897 was not arrived at from former returns to this bureau, but were not verified. It is possible therefore that they deviate somewhat from verified returns. These facts should be borne in mind by all who may have occasion to use these figures.

As explained already, our manufacturing returns for 1896, 1897 and 1898 included 1,245 establishments, classified into 46 industries, while those for 1899, which are presented here in connection with an equal number for 1898, included only

992 returns, classified into 43 industries. A greater number than 992 were actually received, but owing to defects, could not be used. Enough, however, could be gleaned from them to ascertain, in connection with other sources, the increase in 1899 over 1898 in capital, stock, total wages, goods made, average number of persons employed and average yearly earnings.

The amount of capital used each year from 1896 to 1899 inclusive, was \$175,905,124; \$189,760,669; \$198,856,913; and \$211,385,187, respectively.

The cost value of stock, or material each year from 1896 to 1899 inclusive, was \$87,027,266; \$98,130,070; \$112,680,185 and \$118,870,543, respectively.

The amount paid as wages each year was \$26,066,343 in 1896; \$27,821,982 in 1897; \$31,101,634 in 1898, and \$35,418,540 in 1899.

The total value of goods made was \$155,152,906 in 1896; \$169,946,673 in 1897; \$192,070,633 in 1898, and \$210,294,200 in 1899.

The average number of persons employed was 68,823 in 1896; 71,156 persons in 1897; 78,567 in 1898, and 87,990 in 1899.

The average yearly earnings to each person in 1,245 establishments was \$378.66 in 1896; \$391.00 in 1897; \$395.75 in 1898, and \$402.70 in 1899.

The average yearly earnings in 1,205 establishments in 43 industries was \$376.89 in 1896; \$390.37 in 1897; \$394.97 in 1898, and \$401.30 in 1899.

The average yearly earnings to each person in 1,213 establishments in 55 industries was \$382.00 in 1896; \$390.50 in 1897; \$398.55 in 1898, and \$403.73 in 1899. In these are included for 1898 and 1899, the returns for the 922 establishments in 43 industries in this part, as well as those for 221 establishments in 12 industries, which are presented in the next part of this report.

The average yearly earnings to each person, when the average number was employed, in 1,499 establishments in 58 industries was \$396.63 in 1896; \$416.63 in 1897; \$418.95 in 1898, and \$420.50 in 1899. In this case the earnings for each year except the last have been verified and presented before. For the last year, 1899, some of the returns were lacking. But here,

as in all instances of this kind, all available facts were taken into consideration in arriving at the conclusion, and it is believed that the amount for 1899, as given, is practically correct.

In order to correct a few misleading statements that have been made concerning the relation of wages and the value of the goods made, in the preceding parts of this report, we wish to add, that the per cent. of the total amount paid in wages of the total value of the product, or goods made, was 16.76 per cent. in 1896; 16.31 per cent. in 1897; 16.19 per cent. in 1898, and 16.80 per cent in 1899.

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PART VI.

**Persons Employed and Range of Employment
and Unemployment, by Months—Classified
Weekly Earnings in Manufacturing and Mer-
cantile Establishments—Coal, etc., Handling,
Mining, Quarrying and Logging Operations
in 1898.**

MANUFACTURERS' RETURNS, 1898-1899.

CONTINUATION OF THE EMPLOYMENT AND EARNINGS IN MANUFACTURING INDUSTRIES IN 1898, 1899.

The two preceding parts, parts IV. and V., relate respectively, to our manufacturing industries in 1897-98 and 1898-99. The returns for each of the three years were obtained direct from the manufacturers. In part IV. that for 1897-98, 1499 such reports are included. Of these reports, 1,245 showed the number of private firms and corporations and the number of partners and stockholders; the amount of capital invested; the cost value of stock used; the total amount paid as wages; the total value of the goods made; the number of persons employed and their employment and earnings. The other 254 reports relate to the number of persons employed and their employment and earnings only. In part V., that for 1898-99, 992 reports are included. These reports were, in form and nature of the information given, exactly the same as the 1,245 reports which were included in part IV. In fact they differ only in this that they covered the business for different years. These 992 reports, however, do not constitute all the reports for 1898-99. In addition to them 221 reports were received, which did not cover the whole business, but related only to the number of persons employed, and to their employment and earnings. These 221 reports were the same for the years covered as the 254 reports in part IV.; but in this case they were not, as in that part, presented along with those which were complete, or those covering the business done as well as the persons employed. The 221 incomplete reports for part IV. are not included in that part but presented here under the

above head. Had part V. been made up as part IV. it should have included in addition to the 992 complete returns which it now contains, the 221 reports of employment and earnings which are given here.

From this we see that two classes of reports were received, both for 1897-98 and 1898-99. The larger of these classes consists of 1,245 reports for the former and 992 for the latter period. The smaller consists of 254 for the former and 221 for the latter period. Those in the larger class we have called complete because they cover the business done as well as employment and earnings. Those in the smaller class are regarded as incomplete because they relate to employment and earnings only, containing no facts as to the investment and output. Part IV. includes both the complete and incomplete reports. Part V. includes those which were complete only; the incomplete ones are, as said already, presented in the following pages.

The reasons for omitting the 221 reports which relate to employment and earnings only, from part V., hardly need explanation. The main purpose there was to show the condition of business in the manufacturing industries in this state. For this purpose the complete returns were of much greater value than those less complete. Since they were more valuable it is also obvious that they would be more useful alone than when mingled with those of less value. When presented alone they also offer better and much more convenient opportunities for comparisons, as between the different elements, than in any other way. For these and other reasons it was thought best to present the two classes of returns for 1898-99 separately.

As alluded to already, the presentations under this head have been compiled from 221 reports relating to the number of persons employed, and their employment and earnings in 1898-99. These reports were classified into 12 separate industries.

The main presentations are made in three tables. The first in order of these, under the head of "Persons employed by months" show for each industry the number of male, female and total persons employed each month in 1898 and 1899. The second table in order, the one headed "Hour, Day and Piece Hands" shows by industries the number of males over and under

18 years respectively, and the number of females over and under 18 years of age respectively, and also the total number, in each case, who were employed by the hour, day, and piece. The third in order, the table under "Classified Weekly Earnings," show, for each industry, the classified weekly earnings of the number employed therein. These tables appear in the order given. Then follows summaries and analysis of each, both separately, and when these summaries are combined with the corresponding ones in the preceding part, or of the 992 reports presented there. The results for both the complete and incomplete returns, or of the 992 and 221 reports when combined, will thus, as far as the elements affected in both are concerned, be found in this part.

Persons employed by months.

BEVERAGES (SOFT DRINKS).

(18 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	170	1	171	173	2	175
February	183	1	183	174	2	176
March	210	4	214	193	3	196
April	223	4	227	214	3	217
May	230	4	234	214	3	217
June	245	4	249	233	3	236
July	240	4	244	236	3	239
August	221	3	224	227	2	229
September	223	3	226	221	3	224
October	199	3	202	201	3	204
November	187	3	190	193	3	201
December	184	4	188	195	2	197

CHEMICAL PREPARATIONS.

(7 establishments.)

January	50	15	65	55	12	67
February	52	4	56	53	11	64
March	56	13	69	58	10	68
April	57	13	70	60	11	71
May	57	12	69	58	9	67
June	60	12	72	59	10	69
July	60	12	72	63	12	75
August	63	12	74	60	19	79
September	61	13	74	74	20	94
October	61	13	74	68	21	87
November	61	13	74	65	21	86
December	58	12	71	65	17	82

COAL AND WOOD.

(23 establishments.)

January	1,452	.....	1,452	1,319	.....	1,319
February	1,181	.....	1,181	1,345	.....	1,345
March	1,018	.....	1,018	1,153	.....	1,153
April	1,122	.....	1,122	1,070	.....	1,070
May	1,228	.....	1,228	1,227	.....	1,227
June	1,345	.....	1,345	1,408	.....	1,408
July	1,525	.....	1,525	1,357	.....	1,357
August	1,747	.....	1,747	1,784	.....	1,784
September	1,856	.....	1,856	1,810	.....	1,810
October	2,012	.....	2,012	1,875	.....	1,875
November	1,997	.....	1,997	1,851	.....	1,851
December	1,847	.....	1,847	1,452	.....	1,452

Persons employed by months.

ELECTRIC LIGHT, POWER AND STREET RAILWAYS.

(46 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	788	4	792	755	4	759
February	785	4	789	788	4	792
March	833	4	837	790	4	794
April	922	4	926	825	4	829
May	1,098	4	1,042	966	4	970
June	1,048	5	1,053	977	4	981
July	1,026	6	1,032	1,006	4	1,010
August	1,012	6	1,018	953	4	957
September	960	6	966	955	4	959
October	960	6	966	967	4	971
November	1,017	6	1,023	965	4	969
December	941	6	947	876	4	880

FANCY ARTICLES.

(5 establishments.)

January	83	37	120	159	80	239
February	148	37	185	169	82	251
March	94	38	132	162	72	234
April	111	44	155	155	82	237
May	118	44	167	163	84	247
June	109	48	157	158	87	245
July	109	40	149	162	97	259
August	110	42	152	162	101	263
September	117	47	164	142	96	238
October	125	53	178	171	104	275
November	123	50	173	178	104	282
December	130	55	185	179	106	284

FOOD PREPARATIONS.

(27 establishments.)

January	2,055	81	2,136	1,711	80	1,791
February	1,655	79	1,734	1,655	84	1,739
March	1,567	81	1,648	1,543	88	1,631
April	1,536	81	1,617	1,507	86	1,593
May	1,770	96	1,866	1,495	92	1,587
June	2,011	515	2,526	1,765	285	2,050
July	2,174	429	2,603	2,038	430	2,468
August	2,180	423	2,603	1,902	409	2,311
September	2,129	562	2,691	1,505	155	1,660
October	1,551	88	1,639	1,658	139	1,797
November	1,980	118	2,098	1,772	101	1,873
December	2,203	117	2,320	1,814	76	1,890

Persons employed by months.

GRAIN AND WAREHOUSE MEN.

(7 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	64	.....	64	79	.....	79
February	10	.....	10	68	.....	68
March	64	.....	64	68	.....	68
April	66	.....	66	65	.....	65
May	84	.....	84	79	.....	79
June	77	.....	77	85	.....	85
July	68	.....	68	79	.....	79
August	74	.....	74	85	.....	85
September	133	.....	133	129	.....	129
October	148	.....	148	134	.....	134
November	128	.....	128	110	.....	110
December	106	.....	106	85	.....	85

LAUNDRIES.

(51 establishments.)

January	186	400	586	154	461	615
February	163	391	554	162	453	615
March	165	392	557	191	507	698
April	170	424	594	171	634	805
May	170	453	623	171	562	732
June	176	500	676	171	616	787
July	179	617	696	183	608	786
August	181	522	703	171	507	678
September	182	499	681	185	610	795
October	181	461	642	176	571	747
November	176	443	619	110	543	653
December	164	413	577	192	523	715

LITHOGRAPHING AND ENGRAVING.

(6 establishments.)

January	322	55	377	301	50	351
February	323	60	383	298	47	345
March	316	68	384	298	54	352
April	339	51	390	304	48	352
May	313	65	378	292	59	351
June	323	75	398	295	58	353
July	300	87	387	291	55	346
August	301	62	363	291	54	345
September	344	42	386	309	51	360
October	328	68	396	301	53	354
November	308	51	359	305	61	366
December	343	43	386	309	49	358

Persons employed by months.

MIXED TEXTILES.

(6 establishments.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	123	249	372	132	325	457
February	125	269	394	134	335	469
March	137	295	432	141	342	483
April	160	287	447	159	329	488
May	139	286	425	157	324	481
June	143	302	445	155	316	471
July	144	295	439	143	268	411
August	131	259	390	134	252	386
September	121	226	347	140	244	384
October	135	250	385	138	264	402
November	138	291	429	142	291	433
December	137	305	442	140	313	453

RAILWAY EQUIPMENT.

(13 establishments.)

January	4,846	6	4,852	4,981	5	4,986
February	4,821	6	4,827	4,837	5	4,842
March	4,865	6	4,871	4,822	5	4,827
April	4,913	6	4,919	5,094	5	5,099
May	4,976	6	4,982	5,117	5	5,122
June	4,992	7	4,999	5,238	5	5,243
July	4,925	7	4,932	5,199	4	5,203
August	5,063	7	5,090	5,235	5	5,290
September	5,115	7	5,122	5,567	5	5,572
October	5,120	7	5,127	5,440	5	5,445
November	5,019	7	5,026	5,225	5	5,230
December	5,055	7	5,062	5,110	5	5,115

MISCELLANEOUS.

(12 establishments.)

January	632	20	652	639	20	659
February	644	21	665	643	22	665
March	653	24	677	670	24	694
April	662	24	686	704	32	736
May	678	18	691	711	35	746
June	698	23	721	715	24	739
July	409	23	432	465	23	483
August	410	24	434	453	32	485
September	702	25	727	766	37	803
October	791	25	816	753	34	782
November	681	21	702	756	30	786
December	668	19	687	773	26	799

Persons employed by the hour, day, and piece.

BEVERAGES (SOFT DRINKS).

(18 establishments.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
By the hour.....	10	2	3	.....	15	.....	.....	.....	.....	.....
By the day.....	212	2	27	.....	241	204	3	35	5	247
By the piece.....	.....	.....	.....	.....	.....	3	3	5	.....	10
Aggregates.....	222	4	30	.....	256	207	5	40	5	257

CHEMICAL PREPARATIONS.

(7 establishments.)

By the hour.....	32	.....	.....	.....	32	18	.....	.....	.....	18
By the day.....	33	5	3	.....	41	45	7	2	.....	54
By the piece.....	.....	10	.....	.....	10	6	13	.....	2	21
Aggregates.....	65	15	3	.....	83	64	20	2	2	88

COAL AND WOOD.

(23 establishments.)

By the hour.....	1,799	.....	14	.....	1,793	1,625	.....	5	.....	1,630
By the day.....	410	.....	1	.....	411	283	.....	.....	.....	283
By the piece.....	19	.....	.....	.....	19	31	.....	.....	.....	31
Aggregates.....	2,208	.....	15	.....	2,223	1,939	.....	5	.....	1,944

ELECTRIC LIGHT, POWER AND STREET RAILWAYS.

(46 establishments.)

By the hour.....	144	2	.....	.....	146	92	.....	.....	.....	92
By the day.....	948	4	12	.....	964	915	5	9	.....	929
By the piece.....	3	.....	.....	.....	3	14	1	.....	.....	15
Aggregates.....	1,095	6	12	.....	1,113	1,021	6	9	.....	1,036

Persons employed by the hour, day, and piece.

FANCY ARTICLES.

(5 establishments.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates
By the hour	97	30	15	7	149	9	64	3	41	12
By the day	31	2	.....	2	35	21	.....	.....	.....	280
By the piece .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21
Aggregates	128	32	15	9	184	169	64	19	41	293

FOOD PREPARATIONS.

(27 establishments.)

By the hour	1,064	87	95	101	1,367	958	295	169	95	1,517
By the day	1,123	68	67	.....	1,258	1,181	66	10	107	1,364
By the piece	44	48	.....	.....	92	12	82	.....	.....	94
Aggregates	2,251	203	162	101	2,717	2,151	443	179	202	2,975

GRAIN AND WAREHOUSE MEN.

(7 establishments.)

By the hour	10	.....	.....	.....	10	.....	.....	.....	.....	.....
By the day	145	.....	.....	.....	145	135	.....	.....	.....	135
By the piece	6	.....	.....	.....	6	.....	.....	.....	.....	.....
Aggregates	161	.....	.....	.....	161	135	.....	.....	.....	135

LAUNDRIES.

(51 establishments.)

By the hour	3	31	5	3	42	10	52	2	.....	64
By the day	181	436	21	63	701	176	530	5	49	760
By the piece .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aggregates	184	467	26	66	743	186	582	7	49	824

Persons employed by the hour, day, and piece.

LITHOGRAPHING AND ENGRAVING.

(6 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
By the hour	96	8	65	32	201	82	4	21	.....	107
By the day	126	9	49	8	192	191	34	22	17	264
By the piece .....	.....	.....	.....	.....	.....	2	.....	.....	.....	2
Aggregates	222	17	114	40	393	275	38	43	17	373

MIXED TEXTILES.

(6 establishments.)

By the hour .....	.....	52	17	25	94	.....	.....	.....	.....	.....
By the day	65	69	96	141	370	71	108	84	53	317
By the piece	8	23	.....	5	36	15	36	27	140	218
Aggregates	73	144	112	171	500	86	145	111	183	535

RAILWAY EQUIPMENT.

(13 establishments.)

By the hour	4,822	6	16	1	4,845	5,321	5	61	.....	5,387
By the day	322	1	.....	.....	323	48	.....	.....	.....	48
By the piece	17	.....	.....	.....	17	60	.....	.....	.....	60
Aggregates	5,161	7	16	1	5,185	5,429	5	61	.....	5,495

MISCELLANEOUS.

(12 establishments.)

By the hour	144	.....	162	.....	306	.....	.....	.....	.....	.....
By the day	367	20	49	1	437	506	26	221	8	761
By the piece	4	5	.....	.....	9	95	6	.....	.....	101
Aggregates	515	25	211	1	752	601	32	221	8	862

Classified weekly earnings.

BEVERAGES. (SOFT DRINKS.)

(18 establishments.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over	1				1	1				1
20.00 but under \$25.00.	1				1	2				2
18.00 but under 20.00.	8				8	5				5
15.00 but under 18.00.	10				10	11				11
13.00 but under 15.00.	20				20	8				8
12.00 but under 13.00.	26				26	23				23
11.00 but under 12.00.	7				7	17				17
10.00 but under 11.00.	19				19	23				23
9.00 but under 10.00.	24				24	32				32
8.00 but under 9.00.	13	1			14	14	1			15
7.00 but under 8.00.	47				47	48				48
6.00 but under 7.00.	39	1			40	16	2			18
5.50 but under 6.00.		2			2					
5.00 but under 5.50.	7		1		8			7		7
4.50 but under 5.00.			6		6			7		7
4.00 but under 4.50.			4		4	1	2	5		8
3.50 but under 4.00.			16		16			7		7
3.00 but under 3.50.			3		3			1		1
2.50 but under 3.00.								15	2	17
2.00 but under 2.50.								4	3	7
1.50 but under 2.00.										
Under \$1.50								1		1
Totals	223	4	30		256	207	5	40	5	257

CHEMICAL PREPARATIONS.

(7 establishments.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over						2				2
20.00 but under \$25.00.	2				2	3				3
18.00 but under 20.00.	4				4	1				1
15.00 but under 18.00.	4				4	7				7
13.00 but under 15.00.	4				4	7				7
12.00 but under 13.00.	8				8	7				7
11.00 but under 12.00.	6				6	7				7
10.00 but under 11.00.	6				6	5				5
9.00 but under 10.00.	6				6	4				4
8.00 but under 9.00.	7	1			8	7				7
7.00 but under 8.00.	4	1			5	6				6
6.00 but under 7.00.	7	4			11	4	4			8
5.50 but under 6.00.	1	1			2		2			2
5.00 but under 5.50.	2				2		2			2
4.50 but under 5.00.		3			3		3	1		4
4.00 but under 4.50.		1			1		3			3
3.50 but under 4.00.	1	2			3	4	3			7
3.00 but under 3.50.	3		1		4	2	1			3
2.50 but under 3.00.			2		2		1		2	3
2.00 but under 2.50.										
1.50 but under 2.00.										
Under \$1.50										
Totals	65	15	3		83	64	20	2	2	88

Classified weekly earnings.

ELECTRIC LIGHT, POWER AND STREET RAILWAYS.

(46 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over	9	.....	.....	.....	9	4	.....	.....	.....	4
20.00 but under \$25.00.	10	.....	.....	.....	10	9	.....	.....	.....	9
18.00 but under 20.00.	17	.....	.....	.....	17	17	.....	.....	.....	17
15.00 but under 18.00.	78	.....	.....	.....	78	78	.....	.....	.....	78
13.00 but under 15.00.	55	.....	.....	.....	55	70	.....	.....	.....	70
12.00 but under 13.00.	70	.....	.....	.....	70	124	.....	.....	.....	124
11.00 but under 12.00.	55	.....	.....	.....	55	114	.....	.....	.....	114
10.00 but under 11.00.	172	.....	.....	.....	172	101	1	.....	.....	102
9.00 but under 10.00.	330	.....	.....	.....	330	365	.....	.....	.....	365
8.00 but under 9.00.	133	1	.....	.....	134	78	1	.....	.....	79
7.00 but under 8.00.	123	2	.....	.....	125	18	1	.....	.....	19
6.00 but under 7.00.	18	2	.....	.....	18	6	2	.....	.....	8
5.50 but under 6.00.	2	.....	.....	.....	2	3	1	1	.....	5
5.00 but under 5.50.	2	.....	.....	.....	2	2	.....	.....	.....	2
4.50 but under 5.00.	12	.....	.....	.....	12	9	.....	1	.....	10
4.00 but under 4.50.	1	1	.....	.....	1	1	.....	1	.....	2
3.50 but under 4.00.	6	.....	.....	.....	6	5	.....	.....	.....	5
3.00 but under 3.50.	5	.....	.....	.....	5	10	.....	.....	.....	10
2.50 but under 3.00.	.....	.....	12	.....	12	9	.....	2	.....	11
2.00 but under 2.50.	.....	.....	.....	.....	.....	.....	.....	1	.....	1
1.50 but under 2.00.	.....	.....	.....	.....	.....	.....	.....	2	.....	2
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Totals	1,066	6	12	.....	1,113	1,021	6	9	.....	1,036

COAL AND WOOD.

(23 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over	78	.....	.....	.....	78	129	.....	.....	.....	129
20.00 but under \$25.00.	45	.....	.....	.....	45	61	.....	.....	.....	61
18.00 but under 20.00.	36	.....	.....	.....	36	18	.....	.....	.....	18
15.00 but under 18.00.	68	.....	.....	.....	68	84	.....	.....	.....	84
13.00 but under 15.00.	84	.....	.....	.....	84	496	.....	.....	.....	496
12.00 but under 13.00.	417	.....	.....	.....	417	361	.....	.....	.....	368
11.00 but under 12.00.	216	.....	.....	.....	216	64	.....	.....	.....	64
10.00 but under 11.00.	232	.....	.....	.....	232	341	.....	.....	.....	341
9.00 but under 10.00.	490	.....	.....	.....	490	336	.....	.....	.....	336
8.00 but under 9.00.	325	.....	.....	.....	325	26	.....	.....	.....	26
7.00 but under 8.00.	161	.....	.....	.....	161	12	1	.....	.....	13
6.00 but under 7.00.	27	.....	.....	.....	27	1	.....	.....	.....	1
5.50 but under 6.00.	17	.....	.....	.....	17	.....	1	.....	.....	1
5.00 but under 5.50.	3	.....	.....	.....	3	.....	.....	.....	.....	.....
4.50 but under 5.00.	4	.....	4	.....	8	3	.....	3	.....	6
4.00 but under 4.50.	4	.....	.....	.....	4	.....	.....	.....	.....	.....
3.50 but under 4.00.	1	.....	1	.....	2	1	.....	.....	.....	1
3.00 but under 3.50.	.....	.....	3	.....	3	.....	.....	.....	.....	.....
2.50 but under 3.00.	.....	.....	4	.....	4	.....	.....	.....	.....	.....
2.00 but under 2.50.	.....	.....	1	.....	1	.....	.....	.....	.....	.....
1.50 but under 2.00.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50	.....	.....	2	.....	2	.....	.....	.....	.....	.....
Totals	2,208	.....	15	.....	2,223	1,939	.....	5	.....	1,944

Classified weekly earnings.

FANCY ARTICLES.

(5 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over	1				1					
20.00 but under \$25.00.	2				2	5				5
18.00 but under 20.00.	5				5	1				1
15.00 but under 18.00.	7				7	4				4
13.00 but under 15.00.	6				6	10				10
12.00 but under 13.00.	4				4	8				8
11.00 but under 12.00.	3				3	2				2
10.00 but under 11.00.	18				18	16				16
9.00 but under 10.00.	14				14	35				35
8.00 but under 9.00.	12				12	11				11
7.00 but under 8.00.	27				27	18				18
6.00 but under 7.00.	21				21	33	1			34
5.50 but under 6.00.	2				2	1	2			3
5.00 but under 5.50.	1				1	6		1		7
4.50 but under 5.00.	1				1	7				7
4.00 but under 4.50.	3	2	1		6	9	3			12
3.50 but under 4.00.	1	2	2		5	2	14	5		21
3.00 but under 3.50.		19	10	6	35	3	30	3	2	38
2.50 but under 3.00.		5			5		4	2	20	26
2.00 but under 2.50.		3	2	3	8				2	2
1.50 but under 2.00.										
Under \$1.50										
Totals	128	32	15	9	184	169	64	19	41	233

FOOD PREPARATIONS.

(27 establishments.)

\$25.00 per wk. and over	28				28	38				38
20.00 but under \$25.00.	10				10	39				39
18.00 but under 20.00.	7				7	39				39
15.00 but under 18.00.	45				45	109				109
13.00 but under 15.00.	128				128	108				108
12.00 but under 13.00.	195				195	211				211
11.00 but under 12.00.	44				44	56				56
10.00 but under 11.00.	257				257	394				394
9.00 but under 10.00.	272				272	531				531
8.00 but under 9.00.	436				436	150	1			151
7.00 but under 8.00.	487	13			500	254	101			355
6.00 but under 7.00.	120	13	12		145	50	31	29		110
5.50 but under 6.00.	57				57	14	41	13	2	70
5.00 but under 5.50.	55	9			64	29	12	6		47
4.50 but under 5.00.	72	9	22	33	106		46	77	4	127
4.00 but under 4.50.	14	103			121	51	73			125
3.50 but under 4.00.	7	14	9	10	40		32	24	15	71
3.00 but under 3.50.	4	20	95	1	120	18	88	14	69	189
2.50 but under 3.00.	13	12		36	61	10	18	71	109	144
2.00 but under 2.50.		10	10	50	70			81	1	9
1.50 but under 2.00.				1	1				2	2
Under \$1.50										
Totals	2,251	203	152	101	2,707	2,151	443	179	202	2,975

Classified weekly earnings.

GRAIN AND WAREHOUSE MEN.

(7 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over	2	.....	.....	.....	2	2	.....	.....	.....	2
20.00 but under \$25.00.	1	.....	.....	.....	1	1	.....	.....	.....	1
18.00 but under 20.00.	5	.....	.....	.....	5	5	.....	.....	.....	5
15.00 but under 18.00.	6	.....	.....	.....	6	10	.....	.....	.....	10
13.00 but under 15.00.	47	.....	.....	.....	47	77	.....	.....	.....	77
12.00 but under 13.00.	23	.....	.....	.....	23	22	.....	.....	.....	22
11.00 but under 12.00.	11	.....	.....	.....	11	3	.....	.....	.....	3
10.00 but under 11.00.	47	.....	.....	.....	47	2	.....	.....	.....	2
9.00 but under 10.00.	16	.....	.....	.....	16	10	.....	.....	.....	10
8.00 but under 9.00.	1	.....	.....	.....	1	3	.....	.....	.....	3
7.00 but under 8.00.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6.00 but under 7.00.	2	.....	.....	.....	2	.....	.....	.....	.....	.....
5.50 but under 6.00.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5.00 but under 5.50.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4.50 but under 5.00.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4.00 but under 4.50.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3.50 but under 4.00.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3.00 but under 3.50.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2.50 but under 3.00.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2.00 but under 2.50.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.50 but under 2.00.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50 .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	161	.....	.....	.....	161	135	.....	.....	.....	135

LAUNDRIES.

(51 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20.00 but under \$25.00.	1	.....	.....	.....	1	2	.....	.....	.....	2
18.00 but under 20.00.	.....	.....	.....	.....	.....	1	.....	.....	.....	1
15.00 but under 18.00.	14	.....	.....	.....	14	13	.....	.....	.....	13
13.00 but under 15.00.	10	.....	.....	.....	10	19	.....	.....	.....	19
12.00 but under 13.00.	13	.....	.....	.....	13	16	.....	.....	.....	16
11.00 but under 12.00.	11	.....	.....	.....	11	13	.....	.....	.....	13
10.00 but under 11.00.	30	2	.....	.....	32	28	3	.....	.....	31
9.00 but under 10.00.	38	9	.....	.....	47	38	4	.....	.....	42
8.00 but under 9.00.	23	10	.....	.....	33	9	8	.....	.....	17
7.00 but under 8.00.	12	25	.....	.....	38	15	31	.....	.....	46
6.00 but under 7.00.	11	88	.....	.....	99	16	120	.....	.....	136
5.50 but under 6.00.	7	41	.....	.....	48	5	54	.....	1	60
5.00 but under 5.50.	7	103	.....	.....	110	4	142	1	.....	147
4.50 but under 5.00.	4	52	2	.....	61	4	52	1	.....	57
4.00 but under 4.50.	1	60	3	10	74	1	84	1	6	92
3.50 but under 4.00.	2	38	3	7	50	2	50	1	7	60
3.00 but under 3.50.	.....	28	7	20	55	.....	25	1	29	55
2.50 but under 3.00.	.....	6	10	22	38	.....	7	1	6	14
2.00 but under 2.50.	.....	3	.....	3	6	.....	2	1	.....	3
1.50 but under 2.00.	.....	2	.....	1	3	.....	.....	.....	.....	.....
Under \$1.50 .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	184	467	26	66	743	186	582	7	49	824

Classified weekly earnings.

LITHOGRAPHING AND ENGRAVING.

(6 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over	16				16	18				18
20.00 but under \$25.00.	15				15	20				20
18.00 but under 20.00.	35				35	29				29
15.00 but under 18.00.	25				25	22				22
13.00 but under 15.00.	11				11	11				11
12.00 but under 13.00.	15				15	12				12
11.00 but under 12.00.	11				11	11				11
10.00 but under 11.00.	14				14	27	1			28
9.00 but under 10.00.	15	1			16	6				6
8.00 but under 9.00.	15				15	13				13
7.00 but under 8.00.	11	1			12	22	1			23
6.00 but under 7.00.	19	1	3		23	22	1			23
5.50 but under 6.00.	7				7	7				7
5.00 but under 5.50.	5	1	3		9	11				11
4.50 but under 5.00.	4		2		6	6	4			10
4.00 but under 4.50.	2	9	7		18	9	7	1		17
3.50 but under 4.00.	2	4	9		17	9	4	7		20
3.00 but under 3.50.			31	24	55	14	14	25		53
2.50 but under 3.00.			31	8	39	5	6	7	17	35
2.00 but under 2.50.			28	6	34	1		8		4
1.50 but under 2.00.										
Under \$1.50										
Totals	222	17	114	40	393	275	38	43	17	373

MIXED TEXTILES.

(6 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over										
20.00 but under \$25.00.	2				2	2				2
18.00 but under 20.00.	2				2	2				2
15.00 but under 18.00.	4				4	4	1			5
13.00 but under 15.00.	10				10	12				12
12.00 but under 13.00.	13				13	17				17
11.00 but under 12.00.	2				2	2	1			3
10.00 but under 11.00.	9	6			15	7				7
9.00 but under 10.00.	16	4			20	9				9
8.00 but under 9.00.	4	9			13	5	3			8
7.00 but under 8.00.	4	10	1		15	10	13			23
6.00 but under 7.00.	5	17	4		26	5	29			34
5.50 but under 6.00.	2	23	6	2	33	6	27	1		34
5.00 but under 5.50.		14	1	5	20	11			1	12
4.50 but under 5.00.		7	2	4	13	3	13	24		47
4.00 but under 4.50.		31	6	10	47	2	26	10	16	54
3.50 but under 4.00.		3	14	6	23		3	12	18	29
3.00 but under 3.50.		12	12	18	42		11	14	27	63
2.50 but under 3.00.		2	22	33	57		2	22	36	60
2.00 but under 2.50.			22	41	63			11	64	75
1.50 but under 2.00.		1	22	27	50			15	13	28
Under \$1.50				25	25				6	6
Totals	73	144	112	171	500	86	145	111	193	535

Classified weekly earnings.

RAILWAY EQUIPMENT.

(13 establishments.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Aggregates.
\$25.00 per wk. and over	31	.....	.....	.....	31	27	.....	.....	.....	27
20.00 but under \$25.00.	291	.....	.....	.....	291	317	.....	.....	.....	317
18.00 but under 20.00.	118	.....	.....	.....	118	150	.....	.....	.....	150
15.00 but under 18.00.	413	.....	.....	.....	413	451	.....	.....	.....	451
13.00 but under 15.00.	598	.....	.....	.....	598	606	.....	.....	.....	606
12.00 but under 13.00.	442	.....	.....	.....	442	435	.....	.....	.....	435
11.00 but under 12.00.	179	2	.....	.....	181	224	.....	.....	.....	224
10.00 but under 11.00.	639	1	.....	.....	639	654	.....	.....	.....	654
9.00 but under 10.00.	1,065	1	.....	.....	1,066	1,129	1	.....	.....	1,130
8.00 but under 9.00.	575	.....	.....	.....	575	551	1	.....	.....	552
7.00 but under 8.00.	706	2	.....	1	708	714	3	.....	.....	717
6.00 but under 7.00.	78	1	16	.....	95	84	.....	10	.....	94
5.50 but under 6.00.	16	.....	.....	.....	16	13	.....	2	.....	15
5.00 but under 5.50.	12	.....	.....	.....	12	11	.....	.....	.....	11
4.50 but under 5.00.	9	.....	.....	.....	9	10	.....	11	.....	21
4.00 but under 4.50.	1	.....	.....	.....	1	1	.....	13	.....	14
3.50 but under 4.00.	.....	.....	.....	.....	.....	.....	.....	4	.....	4
3.00 but under 3.50.	.....	.....	.....	.....	.....	.....	.....	2	.....	2
2.50 but under 3.00.	.....	.....	.....	.....	.....	.....	.....	3	.....	3
2.00 but under 2.50.	.....	.....	.....	.....	.....	.....	.....	5	.....	5
1.50 but under 2.00.	.....	.....	.....	.....	.....	.....	.....	3	.....	3
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	8	.....	8
	5,161	7	16	1	5,185	5,429	5	61	.....	5,495

MISCELLANEOUS.

\$25.00 per wk. and over	18	.....	.....	.....	18	93	.....	.....	.....	93
20.00 but under \$25.00.	46	.....	.....	.....	46	5	.....	.....	.....	5
18.00 but under 20.00.	6	.....	.....	.....	6	6	.....	.....	.....	6
15.00 but under 18.00.	31	.....	.....	.....	31	15	.....	.....	.....	15
13.00 but under 15.00.	3	.....	.....	.....	3	16	.....	.....	.....	16
12.00 but under 13.00.	67	.....	.....	.....	67	81	.....	.....	.....	81
11.00 but under 12.00.	1	.....	.....	.....	1	24	.....	.....	.....	24
10.00 but under 11.00.	49	.....	.....	.....	49	60	.....	.....	.....	60
9.00 but under 10.00.	51	1	.....	.....	52	96	1	.....	.....	97
8.00 but under 9.00.	53	1	.....	.....	54	73	3	.....	.....	76
7.00 but under 8.00.	84	3	.....	.....	97	75	4	.....	.....	79
6.00 but under 7.00.	49	.....	.....	.....	49	59	.....	.....	.....	59
5.50 but under 6.00.	3	.....	.....	.....	3	8	.....	.....	.....	8
5.00 but under 5.50.	13	.....	.....	.....	13	10	.....	.....	.....	10
4.50 but under 5.00.	17	2	3	.....	22	14	2	2	.....	18
4.00 but under 4.50.	12	1	.....	.....	13	2	4	3	.....	9
3.50 but under 4.00.	2	10	93	.....	105	.....	7	167	.....	174
3.00 but under 3.50.	.....	7	107	1	115	8	3	34	4	49
2.50 but under 3.00.	.....	.....	6	.....	6	2	6	6	4	13
2.00 but under 2.50.	.....	.....	2	.....	2	.....	1	3	.....	4
1.50 but under 2.00.	.....	.....	.....	.....	.....	.....	.....	2	.....	2
Under \$1.50	.....	.....	.....	.....	.....	.....	.....	2	.....	2
Totals	515	25	211	1	752	601	32	221	8	862

PERSONS EMPLOYED BY MONTHS.

Of the preceding three tables, the first in order shows, for each industry included, the number of male, female and total persons employed each month in 1898 and 1899. Only twelve industries are included in this table. Of these at least five could be classed as Non-Manufacturing industries, although some of them are mixed in this respect.

In order that a better idea of the importance of these industries may be had, and also for the purposes of analysis, the twelve industries in the above table have been combined in such a way as to show, for all, the number employed each month. As thus combined they are presented together in the following exhibit. This exhibit therefore shows for 221 establishments in 12 industries, the total number of male, female and total persons employed each month for the two years covered.

NUMBER OF PERSONS EMPLOYED BY MONTHS IN 1898, 1899.

(221 establishments in 12 industries.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	10,751	868	11,619	10,458	1,039	11,497
February	10,069	862	10,951	10,314	1,045	11,359
March	9,978	925	10,903	10,092	1,105	11,197
April	10,281	938	11,219	10,268	1,224	11,502
May	10,791	978	11,769	10,650	1,177	11,827
June	11,727	1,491	13,218	11,269	1,408	12,667
July	12,669	1,420	14,089	11,221	1,504	12,725
August	12,892	1,360	14,252	11,506	1,335	12,891
September	12,043	1,430	13,473	11,803	1,225	12,028
October	11,611	974	12,585	11,885	1,198	12,063
November	11,815	998	12,813	11,679	1,163	12,842
December	11,843	987	12,830	11,190	1,120	12,310

For 1898 and 1899 the above exhibit shows, for the establishments included, the number of persons each month. Thus as an example of what it exhibits we may mention that of 11,619 persons employed in January, 1898, 10,751 were males, and 868 were females. Of the total persons employed in January 1899, 10,458 were males and 1,039 females. For both years the smallest number are found in March. The variation, however, as between the months is not great. In 1898 the greatest number

employed are found in June, and the next year in October. For the males, when considered alone, the greatest number are in the same months, but for females it is in July both years.

In the next exhibit, the figures in the one above have been combined with those for the 992 establishments presented in the last part. The next exhibit therefor shows the number each month for 1,213 establishments or the total number reporting.

TOTAL NUMBER OF PERSONS EMPLOYED BY MONTHS IN 1898 AND 1899.

(1,213 establishments in 55 industries.)

MONTHS.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
January	61,396	9,223	70,618	69,051	10,466	79,517
February	62,150	9,545	71,695	69,843	10,804	80,647
March	65,047	9,856	74,903	71,068	11,022	82,090
April	70,923	10,138	81,066	74,149	11,099	85,248
May	74,735	10,106	84,841	79,651	11,303	90,954
June	74,447	10,667	85,114	80,070	11,590	91,660
July	74,049	10,566	84,615	80,616	11,823	92,439
August	73,988	10,569	84,557	81,395	11,792	93,187
September	73,497	10,794	84,291	80,141	11,733	91,873
October	72,963	10,425	83,388	79,958	12,031	91,989
November	70,664	10,454	81,118	78,929	11,841	90,770
December	67,231	10,206	77,437	75,961	11,658	87,619

As said, the above exhibit shows the total number employed each month by the 1,213 establishments which reported for the two years. The exhibit is of the greatest importance. It throws more light upon the actual average number employed, the proportion of males and females, the average number of persons to each establishment, and the range of employment and unemployment than any other exhibit in this series. In 1898, the total number employed ranged from 70,618 in January, which was the lowest number, to 85,114, in June, which was the highest. In 1899 the lowest is also for January, but the highest is in August. The low point of employment is thus at the beginning of the year. From January there is a gradual increase in number. A high point is reached in the spring and continues high through the summer. In the latter part of the fall, or towards the end of the year, there is a gradual decrease. This in brief, is about the course each year, both in this and former cases.

PER CENT. OF MALES AND FEMALES OF THE AVERAGE NUMBER OF
PERSONS EMPLOYED EACH MONTH IN 1898, 1899.

(1,213 establishments in 55 industries.)

MONTHS.	1898.			1899.		
	Male per cent.	Female per cent.	Total per cent.	Male per cent.	Female per cent.	Total per cent.
January	86.94	13.06	100.00	86.84	13.16	100.00
February	86.69	13.31	100.00	86.82	13.18	100.00
March	86.84	13.16	100.00	87.78	12.22	100.00
April	87.49	12.51	100.00	86.98	13.02	100.00
May	88.00	11.91	100.00	87.57	12.43	100.00
June	87.47	12.53	100.00	87.36	12.64	100.00
July	87.52	12.48	100.00	87.21	12.79	100.00
August	87.50	12.50	100.00	87.33	12.67	100.00
September	87.19	12.81	100.00	87.23	12.77	100.00
October	87.50	12.50	100.00	86.92	13.08	100.00
November	87.11	12.89	100.00	86.95	13.05	100.00
December	86.82	13.18	100.00	86.69	13.31	100.00

The above exhibit relates to all returns, and, if it is of interest to know the relative proportion of male and female employes in our manufacturing institutions then this exhibit is interesting. It shows the per cent. of males and females each month throughout both years. As to number, the relation of the two sexes seems to be about the same as in former presentation of this kind. Any change that has taken place is slight. The average, for each year, seems to be between 12 and 13 per cent. for the females, and 87 and 88 per cent. for the males. Upon these points, however, more definite figures will be given later. January, 1898, shows 86.94 per cent. of males and 13.06 per cent. of females. The same month in 1899 gives the males at 86.84 and the females at 13.16 per cent. This indicates an increase for the latter year of one-tenth of one per cent. The highest per cent. of females is 13.31 in 1898 and 1899. While at the highest point the per cent. for both years is the same, it occurs in different months. In 1898, February, and in 1899, December had the greatest number of females.

MONTHLY AVERAGE NUMBER OF PERSONS TO EACH ESTABLISHMENT.

(1,213 establishments in 55 industries.)

Months.	Average number of persons to each establishment in 1898.	Average number of persons to each establishment in 1899.
January	58	66
February	59	67
March	62	68
April	65	70
May	70	75
June	70	76
July	70	76
August	70	77
September	69	76
October	69	76
November	67	75
December	64	72

The preceding exhibit shows, for each year, the average number of persons to each establishment when all returns, or the 1,213 reports are included. The exhibit therefore throws much light not only upon the importance of the establishments included, but upon the fluctuations in employment from month to month. As the total number of persons was greater in 1899, it is only self-evident that the average should be so also, since the the same divisor was used. The highest average number in 1898 is 70, while in 1899 it is 77, a difference of 7 persons. This relation, however, is not maintained each month. In one month the difference is only 4, and in others 8 persons. This is as between the two years. In 1898 the lowest number was 58 and the highest 70, a range of 12 persons. In 1899 the lowest was 66, and the highest 77, a range of 11 persons, or one person less than for the preceding year.

MONTHLY RANGE OF EMPLOYMENT AND UNEMPLOYMENT.

(1,213 establishments in 55 Industries.)

Months.	Range of employ- ment in 1893.	Range of employ- ment in 1899.	Range of unem- ployment in 1898.	Range of unem- ployment in 1899.
January	82.96	85.33	17.04	14.67
February	84.24	86.32	15.76	13.68
March	88.00	88.09	12.00	11.91
April	96.24	91.48	4.76	8.52
May	99.69	97.60	.32	2.40
June	100.00	98.36	.....	1.64
July	99.41	99.19	.59	.81
August	99.24	100.00	.66	.....
September	99.03	98.58	.97	1.42
October	97.97	98.71	2.03	1.23
November	96.30	97.41	4.70	3.69
December	90.97	94.03	9.03	5.97

In this exhibit is found the range of employment and unemployment for each of the years covered, when all, or the 1,213 establishments are included. By the range of employment or unemployment is meant the difference in per cent. between the month when the greatest number of persons were employed and the number employed in each one of the other months. This may be better illustrated as follows. In 1898 the greatest number of persons for any month is that of June. This month therefore is the one when there was full employment, that is, all who could find work in our factories were then employed. The per cent. for this month is 100. For each of the other months the per cent. is lower than this, so much lower as the number employed. The number employed in January constituted only 82.96 per cent. of those employed in June. In January 17.04 per cent. were thus unemployed. This was the lowest month for employment. In February the same year those employed constituted 84.24 per cent. of those employed in June, and those unemployed 15.76 per cent. From the beginning of the year up to June, the per cent. employed grows greater from month to month, while those unemployed grows smaller. From June down to the end of the year the reverse is true. In other words, the per cent. employed is decreasing and the per cent. unemployed increasing from one month to another, until the end of the year. December thus shows that only 90.97 per cent. were employed, while 9.03 per cent. were unemployed.

For 1899 the course, as a whole, shows the same tendencies as in 1898, with August as the month when the greatest number were employed. The following difference, however, may be noticed. In 1899 the range between the greatest and smallest number is not as wide as in 1898. This means steadier, or less fluctuation in employment in 1899 than during the preceding year.

SMALLEST NUMBER OF PERSONS EMPLOYED.

We have thus seen the number of persons employed each month by 221 establishments in 12 industries. We have also seen the number each month when all returns, or the reports, from 1,213 establishments in 55 industries, were included. In addition to this there has been shown the per cent. of males and females each month of the total number employed, the monthly average number of persons to each establishment, and the monthly range of employment and unemployment. The next step will be to show the smallest, average, and greatest number of persons employed, or in other words, the number employed at the smallest, average, and greatest period of employment.

By the smallest number of persons employed is really meant the number for the month during which the smallest number for any month were employed. By the average number is meant the average for the year as obtained by dividing the sum of the average number of persons for all months by the number of months. By the greatest number of persons is meant the number employed during the week when the greatest number, for any week during the year, were employed. For this last case the number reported was the same as that for Hour, Day, and Piece hands and for classified weekly earnings.

In showing these facts the same plan as that for the persons employed by the month will be observed. That is, the number for the 221 establishments will be given alone, and then combined with the number of the 992 establishments in the last part, and thus presented as a whole. The presentations as thus completed will show the results for 1,213 establishments in 55 industries, or for the whole number reported.

SMALLEST NUMBER OF PERSONS EMPLOYED.

(221 establishments in 12 industries.)

INDUSTRIES.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
Beverages (soft drinks) ..	170	1	171	173	2	175
Chemical preparations ..	50	4	54	53	9	62
Coal and wood	1,018	.....	1,018	1,070	.....	1,070
Electric light, power and street railways	785	4	789	755	.....	755
Fancy articles	83	37	120	155	72	227
Food preparations	1,536	79	1,615	1,496	76	1,571
Grain and warehousemen ..	10	.....	10	65	.....	65
Laundries	163	391	554	110	453	563
Lithographing and engraving	300	42	342	291	47	338
Mixed textiles	121	226	347	132	244	376
Railway equipment	4,821	6	4,827	4,822	4	4,826
Miscellaneous	409	18	427	453	20	473
Totals	9,466	808	10,274	9,574	927	10,501

The preceding exhibit shows for each of the 12 industries, or 221 establishments included, the smallest number of persons employed in 1898 and 1899.

We notice, in looking at the above exhibit, that some industries are represented by a much greater number of persons than others. The main reason for this is that the industries themselves vary in the number employed. Had they been represented by the total persons employed instead of by a certain percentage only the number in some of them would still have appeared comparatively small. Passing individual industries, and taking up the totals for all, we find, that of the 10,274 persons employed in 1898 9,466 were males and 808 were females; while of the 10,501 persons employed in 1899, 9,574 were males and 927 were females. Comparing the totals for both years it appears that there was an increase for 1899 of 227 persons, or 2.21 per cent. In 1898 the females constituted 7.86 per cent. of the total for these establishments. In 1899 they constituted 8.83 per cent.

The facts just given relates, as said, to the foregoing 221 establishments only. In the next exhibit we will find the results for the 1,213 establishments.

Year.	Males.	Females.	Totals.
1898.....	57,278	8,866	66,144
1899.....	65,084	10,222	75,306
Increase in 1899.....	7,806	1,356	9,162
Per cent. of increase.....	13.63	15.30	13.85

For 1898 and 1899 we find in the above exhibit the number of persons employed by all, or 1,213 establishments, at the smallest period of employment, together with the increase in 1899 as compared with 1898.

As to the number employed it is seen, that in 1898 the males numbered 57,278, the females 8,866, making the total 66,144 persons; that in 1899, the males were 65,084, the females 10,222 and the total 75,306 persons.

Concerning the increase for 1899 the exhibit shows, that the males increased 7,806 persons, or 13.63 per cent., the females 1,356 persons, or 15.30 per cent., and the total 9,162 persons, or 13.85 per cent.

Regarding the proportion of females at this period of employment it is found, that in 1898 they constituted 13.40 per cent. of the total, and that in 1899 the females made up 13.58 per cent. of the totals. These facts, along with the increase in females pointed out in the preceding paragraph, indicates that, as a whole, the females increased at a slightly greater ratio than the males.

AVERAGE NUMBER OF PERSONS EMPLOYED.

In the next exhibit is shown the average number of persons employed in 221 establishments comprising 12 industries in 1898 and 1899.

AVERAGE NUMBER OF PERSONS EMPLOYED.

(221 establishments in 12 industries.)

INDUSTRIES.	No. of establishments.	1898.			1899.		
		AVERAGE NUMBER OF PERSONS EMPLOYED.			AVERAGE NUMBER OF PERSONS EMPLOYED.		
		Males.	Females.	Totals.	Males.	Females.	Totals.
Beverages (not spirituous)	18	209	3	212	206	3	209
Chemical preparations	7	53	12	70	61	14	75
Coal and wood	23	1,527	.....	1,527	1,471	.....	1,471
Electric light, power & street railways	46	944	5	949	901	4	905
Fancy articles	5	114	45	159	162	91	253
Food preparations	27	1,900	221	2,121	1,697	169	1,866
Grain and warehousemen	7	85	.....	85	88	.....	88
Laundries	51	173	451	624	174	550	724
Lithographing and engraving	6	322	61	383	300	52	352
Mixed textiles	6	136	275	411	143	217	360
Railway equipment	13	4,977	7	4,984	5,155	5	5,160
Miscellaneous	12	635	22	657	671	28	699
Totals	221	11,080	1,102	12,182	11,029	1,133	12,162

The preceding exhibit gives not only the average number of persons employed in 1898 and 1899 for each one of the industries included, but for all of these industries.

Standing alone, these industries do not make a very imposing presentation. The total average persons employed by them is rather small comparatively speaking. For 1898 we find a total of 12,182 persons. Of these 11,080, or 90.96 per cent. were males, and 1,102, or 9.04 per cent. females. In 1899 the total number was 12,162 persons. Of these 11,029, or 90.68 per cent. were males, and 1,133, or 9.32 per cent. females. For the total number in 1899 there was thus a decrease in the average of 20 persons; for males there was a decrease of 51 persons, and for females an increase of 31 persons, leaving a net decrease for 1899, as said, of 20 persons in the average number employed.

The next exhibit is devoted to the total average number of persons employed in 1898 and 1899 by the 1,213 establishments reporting for this investigation.

Year.	Males..	Females.	Totals.
1898.....	69,492	10,204	79,696
1899.....	76,691	11,330	88,021
Increase in 1899.....	7,199	1,126	8,325
Per cent. of increase.....	10.36	11.02	10.45

Here we find the average number employed each year by all the establishments reporting. Of the total average number employed in 1898, or 79,696 persons, 69,492 were males and 10,204 were females. In this case the females constituted 12.80 per cent. of the males.

In 1899 the total average number of persons employed was 88,021. Of these 76,691, or 87.13 per cent. were males, and 11,330, or 12.87 per cent. were females. In this case the relation in the number of males and females in the two years remained almost unchanged.

The increase in 1899 as compared with 1898 was 7,199 persons, or 10.36 per cent. for males, 1,126 persons, or 11.02 per cent. for the females, and 8,325 persons or 10.45 per cent. for the total of both sexes.

GREATEST NUMBER OF PERSONS EMPLOYED.

Having thus considered the smallest and the average number of persons employed each year, we will take up the last class in these series, or the greatest number of persons employed, that is, the number employed at the greatest period of employment. These facts, for the two years, are shown in the following exhibit, when 221 establishments only are included.

GREATEST NUMBER OF PERSONS EMPLOYED.

(221 establishments in 12 industries.)

INDUSTRIES.	Number of establishments.	1898.			1899.		
		GREATEST NUMBER OF PERSONS EMPLOYED.			GREATEST NUMBER OF PERSONS EMPLOYED.		
		Males.	Females.	Totals.	Males.	Females.	Totals.
Beverages (not spirituous)	18	252	4	256	247	10	257
Chemical preparations	7	63	15	83	66	22	88
Coal and wood	23	2,223	.....	2,223	1,944	.....	1,944
Electric light, power & street railways	46	1,107	6	1,113	1,030	6	1,036
Fancy articles	5	143	41	184	183	106	289
Food preparations	27	2,413	304	2,717	2,330	645	2,975
Grain and warehousemen	7	161	.....	161	135	.....	135
Laundries	51	210	633	743	193	631	824
Lithographing and engraving	6	336	57	393	318	55	373
Mixed textiles	6	185	315	500	197	333	535
Railway equipment	13	5,177	8	5,185	5,490	5	5,495
Miscellaneous	12	726	26	752	822	40	862
Total	221	13,001	1,309	14,310	12,960	1,857	14,817

As seen, 221 establishments in 12 industries are included in the above exhibit. For the establishments in each of those industries is shown, the number of persons employed in 1898 and 1899 during the respective weeks, when the greatest number of persons were employed. In order to get a clearer conception of the relation between the figures for the two years, the following presentation is included:

Year.	Males.	Females.	Totals.
1898	13,001	1,309	14,310
1899	12,960	1,857	14,817
Increase, decrease in 1899	- 41	+ 548	+ 507
Per cent. of increase	- .30	+ 41.86	+ 3.54

From these figures we see that in 1898 the females constituted 1,309, or 9.15 per cent. of the total 14,310 persons employed. In 1899 the females constituted 12.53 per cent. of the total for both sexes.

One remarkable feature about these figures is the large proportion of males and the corresponding small proportion of females of the total number of persons in 1898. Considered in connection with that for 1899, and when the smallest and average number were employed, it seems that the per cent. of females for 1898 is fully 3 per cent. lower than in any of the other cases. This difference appears throughout the above exhibit, affecting the changes between the two years very materially.

The next exhibit shows the greatest number of persons employed when all, or the 1,213 establishments reporting are included.

Year.	Males.	Females.	Totals.
1898.....	84,505	11,576	96,081
1899.....	91,901	13,087	104,988
Increase in 1899.....	7,396	1,511	8,907
Per cent. of increase.....	8.75	13.06	9.26

When 1,213 establishments are included the following number of persons were employed in 1898: Males, 84,505; Females, 11,576; Total, 96,081. In 1899, when the same establishments were included, the number was, Males, 91,901; Females, 13,087; Total, 104,988.

From these figures we find that in 1899 as compared with 1898 the following changes took place: In the male persons employed there was an increase of 7,396, or 8.75 per cent. In the females there was an increase of 1,511 persons, or 13.06 per cent. The total number for both sexes increased 8,907 persons, or 9.26 per cent.

Of the total number of persons employed in 1898, 11,575, or 12.05 per cent. were females; and of the total number in 1899 13,087, or 12.47 per cent. were females. In the latter years there was an increase of two-fifths of one per cent. in the relative number of females employed.

CLASSIFICATION.	1898.	1899.	INCREASE IN 1899.	
			Number.	Per cent.
Smallest number employed.....	66,144	75,306	9,162	13.85
Average number employed.....	79,696	88,021	8,325	10.45
Greatest number employed.....	96,081	104,968	8,907	9.26

The preceding exhibit shows the total smallest average, and greatest number of persons employed in 1898 and 1899 together with the increase, in each case in both number and per cent., in 1899 as compared with 1898, when the 1,213 establishments reporting are included. Thus we find that the smallest number increased 9,162 persons, or 13.85 per cent.; that the average number increased 8,325 persons, or 10.45 per cent.; and that the greatest number increased 8,907 persons, or 9.26 per cent.

PERSONS EMPLOYED BY THE HOUR, DAY, AND PIECE.

We have seen the number of persons employed by months and the number employed at the smallest, average, and greatest period of employment, and now come to another class of data which also relates to employment. This class of facts shows by industries, the respective number of persons employed by the hour, day and piece. In the preceding part, or part V, these facts, as obtained from 992 establishments, were fully presented. In the present part, or in the following pages, those obtained from 221 establishments will be given, first separately and then, when combined with the facts for the above 992 establishments. As thus combined 1,213 establishments are represented; and the results obtained are those of the investigation, as a whole, so far as the data involved are concerned.

PERSONS EMPLOYED BY THE HOUR, DAY, AND PIECE.

(221 establishments in 12 industries.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.
By the hour.....	8,124	188	377	162	8,851	8,110	356	261	95	8,822
By the day.....	4,029	614	339	220	5,232	3,891	814	404	280	5,422
By the piece.....	131	88	.....	7	227	259	140	32	143	573
Totals.....	12,285	920	716	389	14,310	12,263	1,340	697	517	14,817

The preceding exhibit shows, for 221 establishments in 1898 and 1899, the respective number of persons, when classified as to sex and age, who were employed by the hour, day, and piece.

The exhibit needs no detailed explanations. A few facts only will illustrate what it means. Thus it may be seen that of the 8,851 persons who were employed by the hour in 1898, 8,124 were males 18 years of age and over, 188 females 18 years and over, 377 males under 18 years, and 162 females under 18 years. In 1899, 8,110 were males 18 years and over, 356 were females 18 years and over, 261 males under 18 years, and 95 were females under 18 years of age. For the day and piece hands also the same facts are shown. In short the above exhibit shows for the 12 industries when combined what the second table in order under this head shows for each of these industries.

PERSONS EMPLOYED BY THE HOUR, DAY, AND PIECE.

(In 12 industries including 221 establishments.)

INDUSTRIES.	No. of establishments.	1898.				1899.			
		Hour.	Day.	Piece.	Totals.	Hour.	Day.	Piece.	Totals.
Beverages, (not spirituous) ...	18	15	241	.....	256	.....	247	10	267
Chemical preparations	7	32	41	10	83	13	54	21	88
Coal and wood.	23	1,793	411	19	2,223	1,630	283	31	1,944
Electric light, power and St. railways	46	146	964	3	1,113	92	929	15	1,036
Fancy articles.	5	.....	149	35	184	12	260	21	293
Food preparations	27	1,367	1,258	92	2,717	1,517	1,364	94	2,975
Grain & warehouse men...	7	10	145	6	161	.....	125	.....	125
Laundries	51	42	701	.....	743	64	760	.....	824
Lithographing and engraving	6	201	192	.....	393	107	264	2	373
Mixed textiles.	6	94	370	36	500	.....	317	218	535
Railway equipment	13	4,845	323	17	5,185	5,387	48	60	5,495
Miscellaneous	12	306	437	9	752	.....	761	101	862
Totals ...	221	8,851	5,232	227	14,310	8,882	5,422	573	14,817

The above exhibit differs somewhat from the one preceding it. The former exhibit is a sort of a summary of the table for the twelve industries, that is the second table in order under this head. The above shows separately for each industry the respective number of the hour, day, and piece hands each year. A glance at this exhibit discloses the fact that the great majority were employed by the day; that in 1898 one industry and in 1899 four industries employed no one by the hour at the greatest period of employment; and that in 1898, three industries and in 1899, four industries employed no one at piece work at this period.

Concerning the respective relation of the total in each class to the total number employed we find the following: Of the total number employed in 1898, or 14,310 persons, 8,851, or 61.85 per cent. were employed by the hour; 5,232 persons, or 36.56 per cent., were employed by the day; and 227 persons, or 1.59 per cent. were employed at piece work. In 1899, those employed by the hour constituted 59.54 per cent.; the day workers 36.59 per cent.; and those employed at piece work 3.87 per cent. of the total number, which was 14,817 persons.

It will be noticed in connection with these facts that the number employed by the hour is unusually large. The reason for this is found in the fact that in "Coal and Wood," "Food Preparations" and "Railway Equipments" the number employed by the hour greatly exceeded the number employed in other ways. This may be seen from a glance at the exhibit. Why this mode of employment should prevail in these industries we shall not attempt to explain. Strictly speaking, these industries do not come in the manufacturing class. It is possible that the mode of employment which prevails is due to the nature of the work or labor to be performed.

We have thus briefly considered the hour, day and piece workers in the 12 industries which have been made the subject of this section of Part VI. The next step will be to so combine these with those in the preceding part, as to show the total hour, day and piece hands for all the establishments which reported for the two years.

The next exhibit is the first in order to this end. This exhibit shows separately for each year the respective number of males and females 18 years of age and over, and under 18 years, who were employed by the hour, day, and piece.

PERSONS EMPLOYED BY THE HOUR, DAY, AND PIECE.

(1,213 establishments in 55 industries.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.
By the hour.....	23,616	602	1,963	398	26,579	21,571	871	1,873	477	29,793
By the day.....	44,418	3,634	4,661	1,960	54,673	49,062	4,103	4,883	2,185	59,733
By the piece.....	8,644	8,918	1,203	1,064	14,829	8,794	4,317	1,218	1,131	15,460
Totals.....	76,678	8,154	7,827	3,422	90,081	82,427	9,294	7,474	3,793	104,988
Per cent.....	79.81	8.48	8.15	3.56	100.00	80.42	8.85	7.12	3.61	100.00

One feature of the above exhibit is that it shows, for 1898 and 1899 of the 1213 establishments included, the number

of persons in each case as classified with regard to sex and age, who were employed by the hour, day, and piece. As an illustration of this, the fact may be given that of the 26,579 persons who were employed by the hour in 1898, 23,616 were males 18 years and over, 602 females 18 years and over, 1,963 males under 18 years, and 398 persons were females under 18 years. These illustrations might be repeated for each mode of employment each year. The table, however, is uniform and plain, and one illustration is probably sufficient to show its meaning.

There is another feature of this exhibit that ought to be mentioned. As said before, it is made up of the number employed by all establishments reporting for the two years, at the period, or week, during which the greatest number were employed. The number in the exhibit, therefore, corresponds to the number employed at the greatest period of employment, as already shown, and to the number of persons for the same establishments who received classified weekly earnings, as will be shown later. As the above exhibit thus includes the number employed at the greatest period of employment its totals represent the whole number of persons employed at this period, and may be analyzed from this point of view.

Thus we find that in 1898 the total number of persons employed at the period mentioned was 96,081. Of this number 76,678, or 79.81 per cent., were males 18 years and over; 8,154, or 8.48 per cent., were females 18 years and over; 7,827, or 8.15 per cent., were males under 18 years, and 3,422 persons, or 3.56 per cent., were females under 18 years of age.

In 1899 the total number of persons was 104,988. Of these, 84,427, or 80.42 per cent., were males 18 years and over; 9,294, or 8.85 per cent., were females 18 years and over; 7,474, or 7.12 per cent., were males under 18 years, and 3,793, or 3.61 per cent., were females under 18 years.

Comparing these facts it appears that in 1898 88.29 per cent. of the total number were persons 18 years of age and over, and that 11.71 per cent. were persons under 18 years; while in 1899 this relation was 89.27 and 10.73 per cent., respectively. In 1899 as compared with 1898 there was thus a decrease in the number under 18 years of practically one per cent.

Compared with regard to the respective number of males and females, it appears that in 1898 the males constituted 87.96 per cent. of the total persons employed, and that the females constituted 12.04 per cent.; while in 1899 the relation was 87.54 and 12.46 per cent. This indicates an increase in the number of females for the latter year of slightly over four-tenths of one per cent.

The next exhibit shows the per cent. of the number in each class of the total for the class.

PER CENT. OF MALES AND FEMALES OVER AND UNDER 18 YEARS OF AGE WHO WERE EMPLOYED BY THE HOUR, DAY, AND PIECE, OF THE TOTAL NUMBER IN THE RESPECTIVE AGE AND SEX CLASS.

(1,213 establishments in 55 industries.)

CLASSIFICATION.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.
	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.
By the hour.....	30.80	7.38	25.65	11.63	27.67	31.47	9.38	25.06	12.57	28.38
By the day.....	57.93	44.57	59.56	57.28	56.90	58.11	44.17	58.64	57.61	56.90
By the piece.....	11.27	48.05	15.37	31.09	15.43	10.42	46.46	16.30	29.82	14.73
Total	100.00	100.00	100.00	100.00	100.00	100.0	100.00	100.00	100.00	100.00

The above exhibit shows the per cent. relations of the figures in the exhibit which precedes it. The two exhibits should therefore be considered together. When so considered they furnish data for comparisons and study that will throw much light upon the conditions of the employment of the working people in this state.

The exhibit which follows shows, for the same establishments and industries as above, and for the same period and years, the number of males, females, and total of both who were employed by the hour, day, and piece. This exhibit differs from the one second in order above only in this, that the employes here are classified as to sex only, whereas, in the one above, those included are classified as to both sex and age.

RESPECTIVE NUMBER OF MALES, FEMALES AND TOTALS WHO WERE EMPLOYED BY THE HOUR, DAY, AND PIECE.

(1,213 establishments in 43 industries.)

CLASSIFICATION.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
By the hour.....	25,579	1,000	26,579	28,444	1,348	29,792
By the day.....	49,079	5,594	54,673	53,445	6,290	59,735
By the piece.....	9,847	4,982	14,829	10,012	5,448	15,460
Totals.....	84,505	11,576	96,081	91,901	13,086	104,987

The contents of the preceding exhibit has already been described. It gives for each one of the classifications mentioned the actual number of persons employed and thus furnishes opportunities for comparisons in many directions. Thus we find, that of the 84,505 male persons employed in 1898, 25,579 were employed by the hour, 49,079 by the day, and 9,847 by the piece. Of the 26,579 persons that year who were employed by the hour, 25,579 were males and 1,000 females. For 1899 the relations were about the same as for 1898. These relations, however, can be studied to much better effect when presented in percentage. Hence this is done in the two exhibits which follow:

PER CENT. OF THE MALES, FEMALES AND TOTALS EMPLOYED BY THE HOUR, DAY, AND PIECE OF THE TOTAL NUMBER IN EACH CASE.

(1,213 establishments in 55 industries.)

CLASSIFICATION.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
By the hour.....	30.26	8.64	27.66	30.95	10.30	28.47
By the day.....	58.08	48.33	56.90	58.15	48.06	56.80
By the piece.....	11.66	43.03	15.44	10.89	41.64	14.73
Totals.....	100.00	100.00	100.00	100.00	100.00	100.00

In the above exhibit we find, for each year, first, the per cent. of the number of the males who were employed as hour, day, and piece hands, respectively; second, the per cent. of the number of female persons employed by the hour, day, and piece, respectively; third, the per cent. of the total number of the hour, day, and piece hands, respectively.

Leaving out the males and females as presented separately and considering only the totals for both we thus find, that of the 96,081 persons, or the total number in 1898, 27.66 per cent. were employed by the hour, 56.90 per cent. by the day, and 15.44 per cent. at piece work; that of the 104,987 persons, the total for 1899, 28.47 per cent. were employed by the hour, 56.80 per cent. by the day, and 14.73 per cent. were employed at piece work. The relation in each case was thus remarkably close.

PER CENT. OF MALES AND FEMALES OF THE TOTAL NUMBER IN EACH CASE WHO WERE EMPLOYED BY THE HOUR, DAY, AND PIECE.

(1,213 establishments in 55 industries.)

CLASSIFICATION.	1898.			1899.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
By the hour.....	96.24	3.76	100.00	95.48	4.52	100.00
By the day	89.71	10.23	100.00	89.47	10.53	100.00
By the piece.....	66.40	33.60	100.00	64.76	35.24	100.00
Totals.....	87.95	12.05	100.00	87.54	12.46	100.00

In the above exhibit we find for each year the per cent. of the number of males and females, respectively, of the total number in each case who were employed by the hour, day, and piece. Of the total number employed by the hour, 96.24 per cent. were males and 3.76 per cent. were females in 1898, while in 1899 this relation was 95.48 and 4.52 per cent. Of those employed by the day, the relation between the males and females was 89.77 and 10.23 per cent. in 1898, and 89.47 and 10.53 in 1899. Of the piece hands the relation of males and females was 66.40 and 33.60 per cent. in 1898, and 64.76 and 35.24 per cent. in 1899. Of the total number employed in 1898, 87.95 per cent. were

males and 12.05 per cent. were females; while of the total in 1899, 87.54 per cent. were males and 12.46 per cent. were females. While the relations between the number for the two years did not vary a great deal, it is quite plain that, as a whole, there was a small increase in 1899 in the proportion of female employes.

CLASSIFIED WEEKLY EARNINGS.

In the preceding pages we have seen the number of persons employed at the different periods of employment, and the number employed by the hour, day, and piece. In the pages which follow, under this head, we have shown the classified weekly earnings of the persons employed, first, for 221 establishments, or those who only reported in part, and then for 1,213 establishments, or the 992 presented in part V. and the 221 given here. The figures for the 221 establishments are found in the next exhibit. Those for the 1,213 establishments are found in the six exhibits which follow this. In this, as in other cases in this connection, more prominence is thus given to the facts for all industries than to those for the 221 establishments. The reasons for this are too obvious for explanation.

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.
\$25.00 per wk. and over	184	.....	.....	.....	184	814	.....	.....	.....	814
20.00 but under \$25.00.	428	.....	.....	.....	428	466	.....	.....	.....	466
18.00 but under 20.00.	243	.....	.....	.....	243	273	.....	.....	.....	273
15.00 but under 18.00.	705	.....	.....	.....	705	808	1	.....	.....	809
13.00 but under 15.00.	976	.....	.....	.....	976	1,439	.....	.....	.....	1,439
12.00 but under 13.00.	1,293	.....	.....	.....	1,293	1,329	.....	.....	.....	1,329
11.00 but under 12.00.	548	2	.....	.....	548	548	1	.....	.....	549
10.00 but under 11.00.	1,482	9	.....	.....	1,491	1,658	5	.....	.....	1,663
9.00 but under 10.00.	2,337	16	.....	.....	2,353	2,640	6	.....	.....	2,646
8.00 but under 9.00.	1,697	23	.....	.....	1,720	1,940	18	.....	.....	1,958
7.00 but under 8.00.	1,676	57	2	.....	1,735	1,192	169	1	.....	1,362
6.00 but under 7.00.	392	127	35	.....	554	286	190	39	.....	475
5.50 but under 6.00.	114	72	6	.....	194	52	128	18	3	201
5.00 but under 5.50.	87	129	5	.....	226	73	167	16	1	257
4.50 but under 5.00.	140	76	47	10	273	57	126	128	11	322
4.00 but under 4.50.	37	98	78	20	233	70	206	44	24	344
3.50 but under 4.00.	25	195	247	23	495	30	113	222	83	408
3.00 but under 3.50.	12	72	102	69	255	53	173	109	161	405
2.50 but under 3.00.	13	23	91	143	270	26	44	54	191	315
2.00 but under 2.50.	.....	18	71	59	148	1	3	22	67	108
1.50 but under 2.00.	.....	3	30	27	60	.....	.....	22	15	37
Under \$1.50	.....	.....	2	25	27	.....	.....	12	6	18
Totals	12,286	920	716	889	14,810	12,263	1,840	697	517	14,817

The above exhibit is the only one presented relating to the "Classified Weekly Earnings" of those who were employed in the 221 establishments. In examining this exhibit we notice a strong resemblance between it and those already discussed in the preceding two parts, as well as the one which comes immediately after this. A few differences between them are, of course, to be found. Of these, the most noticeable is the one which indicates that the earnings in the above exhibit are higher than for any of the others. This is particularly true for the males 18 years and over. In this case the course is quite high. The greatest number for any one class is that for \$9.00 but under \$10.00. In this class we find 2,353 persons in 1898 and 2,646 persons in 1899. There are several classes both before and after this class in which the number found is quite high, but in no one does it reach the figures for the one just mentioned. This is the only exhibit in this case for the 221 establishments, those next in order being devoted to all industries.

CLASSIFIED WEEKLY EARNINGS.

(1,213 establishments in 55 industries.)

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 15 years and over.	Males under 18 years.	Females under 18 years.	Totals.	Males 18 years and over.	Females 15 years and over.	Males under 18 years.	Females under 18 years.	Totals.
\$25.00 per wk. and over	839	.....	.....	.....	839	1,064	.....	.....	.....	1,064
20.00 but under 25.00.	1,389	.....	.....	.....	1,389	1,372	1	.....	.....	1,373
15.00 but under 20.00.	1,406	.....	.....	.....	1,406	1,578	1	.....	.....	1,579
10.00 but under 15.00.	4,347	.....	.....	.....	4,347	4,933	3	.....	.....	4,941
7.50 but under 10.00.	4,507	4	.....	.....	4,511	5,571	8	4	.....	5,583
5.00 but under 7.50.	5,576	8	.....	.....	5,584	6,799	14	5	.....	6,818
2.50 but under 5.00.	3,041	69	5	.....	3,115	3,683	61	.....	.....	3,744
1.00 but under 2.50.	6,063	96	3	.....	6,142	8,511	56	12	.....	8,579
Under \$1.00	13,411	118	2	.....	13,533	16,575	158	56	.....	16,790
8.00 but under 9.00.	10,893	263	24	.....	11,184	12,993	249	69	.....	13,315
7.00 but under 8.00.	13,137	298	64	.....	13,518	11,109	572	128	.....	11,554
6.00 but under 7.00.	7,700	812	286	33	8,831	6,357	952	524	26	7,355
5.50 but under 6.00.	1,393	771	245	7	2,406	1,078	730	290	21	2,119
5.00 but under 5.50.	1,197	1,244	323	73	2,837	852	1,353	500	84	2,789
4.50 but under 5.00.	1,046	1,321	944	74	3,385	771	1,440	1,094	169	3,455
4.00 but under 4.50.	466	908	838	208	2,420	545	1,004	836	205	2,590
3.50 but under 4.00.	217	1,292	1,385	280	3,174	326	1,252	1,324	470	3,372
3.00 but under 3.50.	54	622	2,118	818	3,612	254	985	1,471	963	3,623
2.50 but under 3.00.	16	245	948	832	2,041	46	363	668	967	2,044
2.00 but under 2.50.	.....	79	472	668	1,219	3	72	380	619	1,074
1.50 but under 2.00.	.....	14	158	344	516	1	12	124	209	346
Under \$1.50	.....	.....	12	60	72	.....	9	51	17	77
Totals	76,678	8,154	7,827	3,422	96,081	84,427	9,294	7,474	3,793	104,988
Per cent	79.81	8.48	8.15	3.56	100.00	80.42	8.85	7.12	3.61	100.00

The preceding exhibit shows the "Classified Weekly Earnings" for 96,081 persons in 1898 and 104,988 persons in 1899. As in former exhibits of this kind, the persons included are classified as to sex and age. Thus we find that in 1898 the males 18 years and over made up 79.81 per cent., the female 18 years and over 8.48 per cent., the males under 18 years 8.15 per cent., and the females under 18 years 3.56 per cent. of the total number. For 1899 practically the same percentages are found. The greatest number in any one class is that for \$9.00 but under \$10.00, and this is true for both years, although there are several other classes about that point which make a fair showing.

As seen, the above exhibit shows the actual number of persons in each class. This exhibit thus furnishes the basis for further analysis. In the next exhibit the number in each case are expressed in their per cent. of the total. With this change the analysis can thus be continued.

WEEKLY EARNINGS.	1898.					1899.				
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Totals.
	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.
\$25.00 per wk. and over	1.09	.....	.....	.....	0.86	1.28	.....	.....	.....	1.01
20.00 but under \$25.00.	1.81	.....	.....	.....	1.44	1.82	0.01	.....	.....	1.80
18.00 but under 20.00.	1.83	.....	.....	.....	1.46	1.86	0.01	.....	.....	1.87
16.00 but under 18.00.	5.68	.....	.....	.....	4.52	5.85	0.02	.....	.....	4.70
13.00 but under 15.00.	5.88	0.05	.....	.....	4.70	6.80	0.08	0.06	.....	5.51
12.00 but under 13.00.	7.28	0.10	.....	.....	5.82	8.05	0.15	0.07	.....	6.49
11.00 but under 12.00.	3.97	0.84	0.07	.....	3.24	4.38	0.85	.....	.....	3.57
10.00 but under 11.00.	7.89	1.06	0.04	.....	6.39	10.08	0.60	0.16	.....	8.17
9.00 but under 10.00.	17.49	1.45	0.02	0.05	14.08	19.63	1.70	0.75	0.03	16.04
8.00 but under 9.00.	14.20	3.22	0.31	0.11	11.65	15.39	2.67	0.92	0.11	12.68
7.00 but under 8.00.	17.13	3.68	0.82	0.55	14.07	13.17	6.15	1.69	1.24	11.29
6.00 but under 7.00.	10.04	9.96	3.65	0.96	9.19	7.54	10.24	7.02	0.69	7.49
5.50 but under 6.00.	1.80	9.46	3.13	0.24	2.51	1.28	7.85	3.82	0.56	2.02
5.00 but under 5.50.	1.56	15.26	4.13	2.13	2.95	1.01	14.55	6.69	2.21	2.65
4.50 but under 5.00.	1.37	16.20	12.06	2.17	3.52	0.92	15.49	14.50	4.22	3.23
4.00 but under 4.50.	0.61	11.13	10.71	6.08	2.62	0.64	10.80	11.19	5.40	2.43
3.50 but under 4.00.	0.28	15.84	17.69	8.18	3.32	0.38	13.47	17.72	12.39	3.22
3.00 but under 3.50.	0.07	7.63	27.06	23.90	3.76	0.30	10.60	19.01	25.38	3.46
2.50 but under 3.00.	0.02	3.00	12.11	24.31	2.12	0.05	3.91	8.93	25.49	1.55
2.00 but under 2.50.	.....	0.98	6.03	19.52	1.27	0.01	0.77	5.08	16.32	1.02
1.50 but under 2.00.	.....	0.17	2.02	10.05	0.54	.....	0.19	1.66	5.51	0.33
Under \$1.50	.....	.....	0.15	1.75	0.07	.....	0.09	0.63	0.45	0.07
Totals	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.

Here we find the per cent. of each class of wage earners who were found in each wage class. The exhibit as seen includes 1,213 establishments classified in 55 industries; or, in other

words, it includes all the establishments which reported for this investigation in 1898 and 1899. As these establishments cover, by far, the greater part of the productive capacity for the state, the exhibit can be safely regarded as representing the conditions in this state as far as the earnings of the workers are concerned.

Looking over the table, as a whole, it becomes evident, even at the first glance, that the male employes 18 years and over received the highest earnings. Next in order, in point of earnings, come the females 18 years and over. As the third we find the males under 18 years, while the females under 18 years received the lowest earnings of all. This perhaps only confirms what our common sense already had told us about these matters. Still the facts are interesting. Even the fact itself that experience and the data collected should happen to agree is, not the least in importance. The difference in the earnings between each class of workers is clearly marked though, of course, it is in no case exactly measured. The two classes whose earnings seem the nearest alike are females 18 years and over and males under 18 years. But even in this case the difference can be readily discerned. From this exhibit one might almost be warranted in drawing the conclusion that each class of workers were paid according to their efficiency.

The exhibit as a whole includes twenty-two classes of earnings, beginning with "25.00 per week and over," and ending with the class "Under \$1.50 per week." It is perhaps significant that, in either year, there is not a class of workers, when given separately, that is represented in all these classes of earnings. For the males 18 years and over we find no one in the lower classes of earnings; for the other classes of persons we find no representation in the higher classes of earnings. This may be further illustrated. For males 18 years and over we find no one in any of the classes below \$2.50 per week. For females 18 years and over, no one in any class above \$13.00 but under \$15.00. For males under 18 years no one above \$11.00 but under \$12.00 is found. And for females under 18 years there is no representation above the class \$9.00 but under \$10.00. In the columns for the total, or where all classes of wage earners each year are combined, all wage classes are also represented. It is in these columns that the course of wages for the two years can be best studied.

In order to facilitate further analysis and comparisons, the facts in the two preceding exhibits have been compiled into fewer classes or a briefer space and again presented. These presentations also begin with an exhibit showing the number of the persons who received classified earnings in 1898 and 1899.

CLASSIFIED WEEKLY EARNINGS.

(1,213 establishments in 55 industries.)

WEEKLY EARNINGS.	1898.			1899.		
	Males. Number.	Females. Number.	Totals. Number.	Males. Number.	Females. Number.	Totals. Number.
Under \$5.00 per week....	8,674	7,765	16,439	7,834	8,747	16,581
\$5.00 but under \$6.00.....	3,148	2,086	5,234	2,720	2,188	4,908
6.00 but under 7.00.....	7,988	845	8,831	6,881	978	7,859
7.00 but under 8.00.....	13,201	317	13,518	11,235	619	11,854
8.00 but under 9.00.....	10,917	287	11,184	13,063	253	13,315
9.00 but under 10.00.....	13,413	120	13,533	16,631	159	16,790
10.00 but under 12.00.....	9,102	165	9,267	12,206	117	12,323
12.00 but under 15.00.....	10,083	12	10,095	12,379	23	12,401
15.00 but under 20.00.....	5,753	.....	5,753	5,517	3	5,520
20.00 and over	2,228	.....	2,228	2,436	1	2,437
Totals	84,505	11,576	96,081	91,901	13,087	104,988

The above exhibit includes the same number of persons and covers the same period as the two exhibits which precede it. In fact it differs from these exhibits only in this, that the classifications of earnings have been reduced from 22 to 10, and that in the persons employed the classification as to age was omitted. The persons employed are, in this exhibit, classified as to sex only. That is, the columns for males include all male persons regardless of age, and the columns for females include all female persons regardless of age. It should also be noticed that in these exhibits the order of the wage classes is reversed. Thus the lower classes come first here instead of at the foot, as in the preceding exhibits. Of the 96,081 persons who received classified earnings in 1898, 12.05 per cent. were females and 87.95 per cent. males. Of the total in 1899, or 104,988 persons, 12.46 per cent. were females and 87.54 per cent. males. The next exhibit has been devoted to percentages:

CLASSIFIED WEEKLY EARNINGS.

(1,213 establishments in 55 industries.)

WEEKLY EARNINGS.	1898.			1899.		
	Male per cent.	Female per cent.	Total per cent.	Male per cent.	Female per cent.	Total per cent.
Under \$5.00 per week....	10.27	67.09	17.11	8.52	66.84	15.80
\$5.00 but under \$6.00.....	3.72	18.10	5.46	2.96	16.72	4.67
6.00 but under 7.00.....	9.45	7.80	9.20	7.48	7.48	7.48
7.00 but under 8.00.....	15.62	2.78	14.07	12.22	4.73	11.29
8.00 but under 9.00.....	12.92	2.30	11.64	14.22	1.94	12.68
9.00 but under 10.00.....	15.88	1.04	14.08	18.10	1.21	15.89
10.00 but under 12.00.....	10.78	1.34	9.63	13.28	0.89	11.74
12.00 but under 15.00.....	11.93	0.10	10.51	13.47	0.16	11.81
15.00 but under 20.00.....	6.80		5.99	7.09	0.02	6.81
20.00 and over	2.63		2.32	2.65	0.01	2.33
Totals	100.00	100.00	100.00	100.00	100.00	100.00

This exhibit shows the per cent. relation of the figures in the exhibit by which it is preceded. The above exhibit stands for all the establishments which reported, or 1,213 in all, classified into 55 industries. What it really shows may, perhaps, be best seen from a few examples. Thus we may take the figures for 1898 first. From the very first line we learn that of the total number of male persons included, 10.27 per cent. received less than \$5.00 per week for a week's work; that of the total number of female persons included, 67.09 per cent. received less than \$5.00 for a week's work; and that of the total number for both sexes, 17.11 per cent. earned less than \$5.00 per week. If we now move down the exhibit, down to class \$9.00 but under \$10.00, the class in which, as the exhibit originally stood, the greatest number of persons were employed, we find, as a further illustration, that of the total males included, 15.88 per cent. received \$9.00 but under \$10.00 per week; that of the total females, 1.04 per cent. received this amount, and that the total for both sexes, 14.08 per cent., earned this amount per week.

Taking up the figures for 1899 we find that less than \$5.00 per week was earned by 8.52 per cent. of the males, 66.84 per cent. of the females and 15.80 per cent. of all the persons employed. Comparing these figures with those of 1898, a substantial increase may be observed for the latter year. For the class \$9.00 but under \$10.00, or the second class considered for 1898,

we find in this also a substantial increase for 1899. Thus, of the total males, 18.10 per cent. earned this much as against 15.88 per cent. for 1898. Of the females, 1.21 per cent. in 1899 as against 1.04 per cent. in 1898 earned this amount. Of the total, the per cent. for the two years stood 14.08 and 15.99, or an increase of 1.91 per cent. for 1899. These illustrations constitute a fair sample, not only of what the exhibit shows, but of the trend of the earnings for the period covered.

In the following exhibit, which covers the same ground as the above, the classification of earnings has been reduced to a still smaller number:

PER CENT. OF PERSONS WHO RECEIVED \$9.00, \$7.00, \$6.00, \$5.00 AND OVER PER WEEK, RESPECTIVELY, AND THE PER CENT. RECEIVING LESS THAN \$5.00 PER WEEK IN 1898 AND 1899.

(1,213 establishments in 55 industries.)

WEEKLY EARNINGS.	1898.			1899.		
	Males Per cent.	Females Per cent.	Totals Per cent.	Males Per cent.	Females Per cent.	Totals Per cent.
\$9.00 per week and over..	48.02	2.48	42.53	54.59	2.29	48.07
7.00 per week and over..	76.56	7.51	68.24	81.03	8.96	72.04
6.00 per week and over..	86.01	14.81	77.44	88.52	16.44	79.53
5.00 per week and over..	89.73	32.91	82.89	91.43	33.16	84.26
Under \$5.00 per week....	10.27	67.09	17.11	8.52	66.84	15.80

The preceding exhibit points out the course of wages or earnings during the period covered better than any others in these series. A few comparisons will make this plain. In 1898, 48.02 per cent. of the males, 2.48 per cent. of the females, or 42.53 per cent. of the total for both received as earnings for a week's work, or for six days' work \$9.00 or over. In 1899, 54.59 per cent. of the males, 2.29 per cent. of the females, or 48.07 per cent. of the total for both earned \$9.00 or more in a week, or in six work days. For 1899 this means an increase in the number who received \$9.00 or over for six days' labor, of 5.54 per cent. Each one of the other classes in the table shows an increase for 1899 as compared with 1898. This is plain when the figures for each class in the two years are compared. As further evidence of this, the last class, those who received less than \$5.00 for a week's work,

may be cited. In 1898, 10.27 per cent. of the males, 67.09 per cent. of the females, or 17.11 per cent. of the total of both sexes received less than \$5.00 for a week's labor. In 1899, 8.52 per cent. of the males, 66.84 per cent. of the females, or 15.80 per cent. of the total for both received less than this amount. To substantiate the proposition that the course of wages was on the increase in 1899 as compared with 1898 no other evidence than the facts in the preceding exhibit are needed.

For the first exhibit under this head, that for 221 establishments, the figures were obtained from the third table in order, from the beginning of this part, the table which shows the "Classified Weekly Earnings" in 12 industries. For the other exhibits, the combined results of the above table for 12 industries and the table in part V for 43 industries were used. These facts are repeated here in order to call attention to the importance of the results as shown in the above exhibits.

In order to obtain some idea of the proportion of males and females in each wage class, or class of earnings, the following exhibit is included:

WEEKLY EARNINGS.	1898.			1899.		
	Males Per cent.	Females Per cent.	Totals Per cent.	Males Per cent.	Females Per cent.	Totals Per cent.
Under \$5.00 per week....	52.77	47.23	100.00	47.24	52.76	100.00
\$5.00 but under \$6.00.....	60.04	39.96	100.00	55.42	44.58	100.00
6.00 but under 7.00.....	90.43	9.57	100.00	87.69	12.31	100.00
7.00 but under 8.00.....	97.65	2.35	100.00	94.78	5.22	100.00
8.00 but under 9.00.....	97.61	2.39	100.00	96.10	3.90	100.00
9.00 but under 10.00.....	99.11	0.89	100.00	99.05	0.95	100.00
10.00 but under 12.00.....	98.32	1.68	100.00	99.05	0.95	100.00
12.00 but under 15.00.....	99.88	0.12	100.00	99.82	0.18	100.00
15.00 but under 20.00.....	100.00	.....	100.00	99.95	0.05	100.00
20.00 and over	100.00	.....	100.00	99.96	0.04	100.00
Totals	87.95	12.05	100.00	87.54	12.46	100.00

The above exhibit, the same as those immediately preceding it, is made up from the returns of all, or the 1,213 establishments. It shows the per cent. of males and females in each class of earnings and of the total. Thus, as an example, it may be seen that of the total number who received less than \$5.00 per week, 52.77 per cent. were males and 47.23 per cent. were females in 1898; while 47.24 per cent. were males and 52.76 per cent. were females in 1899. Here we see that the position of the relative number of males and females in this class, as between the

two years, has been almost exactly reversed. The same tendency is also apparent in the four classes which follow. What does this mean? It means, first of all, that in the lower paid occupations, there was, in 1899, a considerable substitution of female for male labor. The causes of this one can only speculate on. It is possible, however, that the increased demand for labor in 1899 somewhat affected the supply of male workers, and that for this reason a greater number of females were employed. This is little more than a guess, but a good many things point to this as the situation.

As said, besides the per cent. of females in each wage class the exhibit also shows the per cent. of females of the total number of persons employed. This we see under the head of totals. Of the total number of persons in 1898, 87.95 per cent. were males and 12.05 per cent. were females; and of the total number of persons in 1899, 87.54 per cent. were males and 12.46 per cent. were females.

AMOUNT PAID AS WAGES.

The following exhibit shows the amount paid as wages by the establishments included in each industry, together with the amount paid by all industries, or the 221 establishments.

By the amount paid as wages is here meant the amount paid mechanics, operatives, and laborers. The amount paid as salaries to partners, superintendents, clerks, etc., has in no case been included either here or in the foregoing two parts.

AMOUNT PAID AS WAGES. (221 establishments, 12 industries.)

INDUSTRIES.	Number of establishments.	TOTAL AMOUNT OF WAGES PAID.		INCREASE (+) OR DECREASE (-) IN 1899.			
		1898.	1899.	Amount.	Per cent.		
Beverages (soft drinks)	13	\$92,577	\$98,422	+	\$5,845	+	06.31
Chemical preparations	7	30,920	32,260	+	1,340	+	04.33
Coal and wood	23	725,719	741,053	+	15,339	+	02.11
Electric light, power and street railways	46	478,686	454,005	-	24,681	-	05.15
Fancy articles	5	53,861	55,804	+	1,943	+	50.80
Food preparations	27	859,619	760,191	-	99,428	-	11.53
Grain and warehouse men	7	49,531	61,088	+	1,555	+	03.14
Laundries	51	181,429	208,411	+	26,982	+	14.83
Lithographing and engraving	6	171,350	158,739	-	12,611	-	07.36
Mixed textiles	6	96,440	93,474	-	2,966	-	02.06
Railway equipment	13	2,832,700	3,037,700	+	205,000	+	07.23
Miscellaneous	12	277,249	296,434	+	19,185	+	06.91
Totals	221	\$5,842,074	\$6,017,564	+	\$175,510	+	3.00

The above exhibit deals with wages. It shows for each of the industries included the total amount paid as wages in 1898 and 1899, together with the increase or decrease in the latter year.

Of the 12 industries which are included, 8 show an increase in the amount paid as wages in 1899 as compared with 1898, and 4 show a decrease. On the whole, however, or when all are included there is a net increase for 1899 as is seen from the totals in above exhibit and from the one which follows:

Year.	Amount of wages.
1898.....	\$5,842,074
1899.....	6,017,584
Increase in 1899.....	175,510
Per cent. of increase.....	3.00

From these figures we learn that the amount paid as wages was \$5,842,074 in 1898 and \$6,017,584 in 1899. In the latter year as compared with 1898 there was thus an increase in the amount paid of \$175,510, or 3 per cent.

The next exhibit shows for above establishments and industries the average yearly earnings to each worker:

Year.	Amount.	Average No. persons.	Average earnings.
1898.....	\$5,842,074	12,182	\$479.57
1899.....	6,017,584	12,162	494.79

In this exhibit we thus find, for each year, the amount of the wages paid, the average number of persons employed, and the average yearly earning to each worker. The yearly earnings to each worker was \$479.59 in 1898 and \$494.79 in 1899.

The foregoing facts under this head relate to 221 establishments only. As it was desirable in this as in previous cases that these facts should be combined with those for the 992 establishments presented in the preceding part, such a combination was effected. The following exhibit shows for 1,213 establishments,

or the entire number reporting, the amount paid as wages in 1898 and 1899, the increase for the latter year, and the average number employed and the yearly earnings of same.

Year.	Amount.	Average No. employed.	Average earnings.
1898.....	\$31,763,115	79,696	\$398.55
1899.....	\$35,537,052	88,021	403.73
Increase 1899..	3,773,937	8,325	5.18
Per cent. increase.....	11.88	10.45	1.30

We find here that the amount paid in wages was \$31,763,115 in 1898 and \$35,537,052 in 1899, an increase for the latter year of \$3,773,937, or 11.88 per cent.

The average number of persons employed was, as seen already, 79,696 in 1898 and 88,021 in 1899. This is an increase for 1899 of 8,325 persons, or 10.45 per cent.

The average yearly earnings to each worker was \$398.55 in 1898 and \$403.73 in 1899. There was thus an increase in earnings for the latter year, as compared with 1898, of \$5.18, or 1.30 per cent.

As said, these figures were obtained from the returns of 1,213 establishments in 55 industries.

EMPLOYMENT AND CLASSIFIED WEEKLY EARNINGS IN MERCANTILE ESTABLISHMENTS.

In foregoing pages in this part we find a continuation of the presentations relating to employment and earnings in manufacturing industries which were begun in part V. In the following pages, under the above head in this part, will be found a series of presentations showing the "Persons Employed Each Month and the Classified Weekly Earnings in Mercantile Establishments in this State in 1898."

The following exhibit shows what mercantile industries were included, the number of establishments by which each of these is represented, and the number of persons employed in these establishments:

Classification of industries.	Number of establishments.	Number employed.
Boots and shoes.....	218	406
Drugs.....	628	1,232
Dry goods.....	278	3,066
General stores.....	1,186	3,870
Groceries.....	796	2,784
Hardware.....	648	2,490
Total six industries.....	3,754	13,808

In the preceding presentation we find the facts indicated for six mercantile industries. The first in order of these is Boots and Shoes. In this case only retail stores are included. For this line 218 establishments, or about 51 per cent. of the total for the state, reported. These establishments or stores employed 406 persons.

Drugs is the second industry in order. This line is represented by 628 establishments, or nearly 80 per cent. of the total for the state. These establishments employed 1,232 persons, and include a few places which were doing a wholesale as well as a retail business.

Dry Goods comes the third in order. In this case 278 retail establishments, or about two-thirds of the whole number in the state, are included. These establishments employed 3,086 persons.

General Stores is the fourth. In this class 1,186 establishments, or about 40 per cent. of those in the state, are included here. The places thus included employed 3,870 persons. A few of these places were undoubtedly what now is termed "department stores."

Groceries is the fifth, or next to the last in order. In this case 796 stores are covered. A few of these did a wholesale as well as a retail business. The number included make up a little less than 30 per cent. of those in the state, and employed 2,784 persons.

Hardware is the last in order. It embraces 648 establishments. These establishments constitute 40 per cent. of the total for the state and employ 2,430 persons. In this case, as for Drugs and Groceries, a few wholesale establishments, or places which sold at wholesale as well as in retail, are included.

The exhibit also shows the total number of establishments and persons included. For the six industries, the first numbered 3,754 and the second 13,808. This is about 3.7 persons to each establishment.

The facts were in every case obtained from the employers, and upon schedules prepared for the purpose. They were also carefully edited and compiled. There is no reason for doubting that the presentations which follow accurately represent the condition in this state.

There are two series of presentations. The first of these relate to the number of persons employed each month during the year, and the monthly range of employment. The second relate to "Classified Weekly Earnings." In both cases there is one presentation for each industry or business, followed by one for all industries, and exhibits for analysis.

Taken as a whole, these presentations are more than ordinarily interesting. In the first place, this is practically the first time in this state that the employment and earnings in mercantile establishments have been investigated on an extensive scale.

Then again, the facts do not only cover each occupation but are so presented that these can be compared. The presentations as a whole are also in harmony with presentations covering the same ground for other classes of wage earners in this state. Comparisons between all are therefore possible.

BOOTS AND SHOES.

(persons employed—by months.)

Months.	Males.	Females.	Totals.
January	368	18	386
February	374	18	392
March	370	18	388
April	372	18	390
May	372	18	390
June	372	18	390
July	368	18	386
August	368	18	386
September	374	20	394
October	372	20	392
November	372	20	392
December	370	20	390

DRUGS.

(persons employed—by months.)

Months.	Males.	Females.	Totals.
January	1,112	50	1,162
February	1,102	50	1,152
March	1,104	50	1,154
April	1,114	50	1,164
May	1,128	54	1,182
June	1,142	56	1,198
July	1,138	56	1,194
August	1,148	54	1,202
September	1,132	54	1,186
October	1,134	54	1,188
November	1,126	52	1,178
December	1,148	84	1,232

DRY GOODS.

(persons employed—by months.)

Months.	Males.	Females.	Totals.
January	990	1,690	2,680
February	986	1,682	2,668
March	992	1,824	2,816
April	1,008	1,976	2,984
May	1,006	1,968	2,974
June	998	2,008	3,006
July	994	1,774	2,768
August	994	1,704	2,698
September	1,030	1,936	2,966
October	1,072	2,124	3,196
November	1,098	2,278	3,376
December	1,178	2,568	3,746

GENERAL STORES.

(persons employed—by months.)

Months.	Males.	Females.	Totals.
January	2,520	948	3,468
February	2,510	942	3,452
March	2,512	950	3,462
April	2,596	1,006	3,602
May	2,618	1,012	3,630
June	2,698	1,026	3,724
July	2,700	1,042	3,742
August	2,650	998	3,648
September	2,688	1,024	3,712
October	2,672	1,064	3,736
November	2,618	1,056	3,674
December	2,600	1,078	3,678

GROCERIES.

(persons employed—by months.)

Months.	Males.	Females.	Totals.
January	2,354	362	2,716
February	2,328	358	2,686
March	2,324	356	2,680
April	2,344	358	2,702
May	2,380	350	2,730
June	2,402	354	2,756
July	2,418	348	2,766
August	2,422	352	2,774
September	2,436	352	2,788
October	2,404	354	2,758
November	2,422	354	2,776
December	2,440	376	2,816

HARDWARE.

(persons employed—by months.)

Months.	Males.	Females.	Totals.
January	1,928	66	1,994
February	1,922	66	1,988
March	1,974	66	2,040
April	2,078	66	2,144
May	2,144	68	2,212
June	2,186	72	2,258
July	2,210	72	2,282
August	2,236	72	2,308
September	2,354	76	2,430
October	2,418	80	2,498
November	2,348	84	2,432
December	2,212	84	2,296

TOTAL ALL MERCANTILE ESTABLISHMENTS.

(persons employed—by months.)

Months.	Males.	Females.	Totals.
January	9,272	3,134	12,406
February	9,222	3,116	12,338
March	9,286	3,264	12,550
April	9,512	3,474	12,986
May	9,648	3,480	13,128
June	9,798	3,534	13,332
July	9,828	3,310	13,138
August	9,818	3,198	13,016
September	10,014	3,462	13,476
October	10,072	3,696	13,768
November	9,984	3,844	13,828
December	9,948	4,210	14,158
Average	9,701	3,477	13,178

The foregoing seven presentations show, in order, the number of male, female, and total persons employed each month in the establishments representing Boots and Shoes, Drugs, Dry Goods, General Stores, Groceries, and Hardware, and the total for all these industries when combined. There is thus one presentation for each of these businesses, and one in which are combined the number for all. This is the manner in which those employed in manufacturing industries also were presented.

As said, the presentations show the number employed each month, and in doing this they also, of necessity, indicate the fluctuation in, or course of employment, from month to month. The light they throw upon employment and the variation in same imparts to these facts their greatest value. In fact, it is the real reason why they are presented.

In Boots and Shoes the course of employment throughout the year was remarkably even. As a matter of fact there was only a variation of eight persons between the months when the smallest and greatest number were employed. The lowest number was 386 and is found for three months, January, July and August. The greatest number was 394 and is found for the month of September. On the whole, the fluctuations in employment in this industry were so small as to have but little influence from an economic point of view.

In the Drug trade the lowest number, or 1,152 persons, is found for February, and the highest, or 1,232 persons, for De-

ember. The difference between the lowest and the highest number is thus 80 persons, a comparatively small fluctuation.

The Dry Goods trade presents a different state of affairs in that the variation in the number from month to month is both sharp and great. The year began with comparatively the lowest number; the lowest, that of 2,668 persons, appears in February. From this month on there is a gradual increase with each month until the end of June, when, for two months, there is a sharp decrease, so sharp, indeed, as to bring the number down to a point nearly as low as that for February. This decrease, however, is again offset by an equally sharp increase for September. The fall trade had now set in, and the number each month grew greater until the climax was reached with the holiday trade in December. The difference between the number employed the lowest and highest month is 1,078 persons. The Dry Goods has clearly two seasons of unusual business activity, the spring and the fall.

In General Stores the employment was much more even than for Dry Goods. Outside of the three first months, which show a reduced number, the course is fairly even throughout the year. The lowest number, or 3,452 persons, was in February, the highest, or 3,742 persons, in July, in difference of 290 persons.

The Grocery trade also presents a rather smooth course, perhaps the smoothest of all. Between February and December, the lowest and highest months, there is a difference in the number employed of only 130 persons.

In the Hardware trade the difference in the number employed in February and August, the lowest and highest months, is 210 persons. In this trade the variations stand out somewhat more prominent than in some of the other trades, though, when it is considered that employes of all kinds are included, the fluctuations cannot be called bad.

We have now reached the last of the preceding seven presentations, that in which the number of persons for all are combined. As is to be expected, this presentation reflects the most important points already discussed. Thus we find that, as a whole, fewer persons are employed the first part of the year than the last. This, as we have seen, is practically true of each one

of the industries of which it is made up. February is the low month and December the high. The difference between the two, in point of the number employed, is from 12,338 to 14,158, or 1,820 persons. In this presentation we also find the average number to each month. For the total of both sexes this average is 13,178 persons. As to the proportion of males and females of this number, we find that 9,701, or 73.54 per cent. are males and 3,477, or 26.46 per cent., are females.

In the following exhibit we find the range of employment and unemployment in each of the different months during the year. As has been explained elsewhere, by the range of employment is meant the per cent. employed each month as based upon the number for the month when the greatest number were employed. By unemployment is of course meant directly the opposite of employment.

TOTAL PERSONS, RANGE OF EMPLOYMENT AND UNEMPLOYMENT.

Months.	Total number em- ployed.	Range of employ- ment. Per cent.	Range of un- employ- ment. Per cent.
January	12,406	87.64	12.36
February	12,338	87.14	12.86
March	12,560	88.64	11.36
April	12,986	91.72	8.64
May	13,158	92.94	7.06
June	13,332	94.16	5.84
July	13,138	92.94	7.06
August	13,016	91.93	8.07
September	13,476	96.18	4.82
October	13,788	97.25	2.75
November	13,828	97.67	2.33
December	14,158		

In the above exhibit we see, first, the total persons employed each month, second, the range of employment, and third, the range of unemployment. The totals here are, of course, the same as those in the presentation for all industries just discussed. December is, as said, the month in which the greatest number were employed. In this month, therefore, there was full employment and no unemployment. In November, or the preceding month, 97.67 per cent. were employed and 2.33 per cent. were unemployed. From this point up, the per cent. employed decreased and the per cent. of unemployed is increasing.

When February, reading up from the foot of the table, is reached, the per cent. employed is seen to be 87.14, and the per cent. unemployed 12.86. In both, this is the widest range, and the facts mean that 12.86 per cent. of those who could find employment at some time during the year were then out of such employment.

We have thus briefly seen the number of persons employed each month by each industry separately, and by all, when combined, and the range of employment and unemployment. The presentations which follow are devoted to the "Classified Weekly Earnings" in the same industries. In this instance, as in that for employment, the facts for each industry or line of business are given separately, and are followed by explanations, or analyses, in which all are combined. The same order of presentation is also followed.

BOOTS AND SHOES.

(classified weekly earnings.)

CLASSIFICATION OF WAGES.	Shoemakers.	CLERKS.		Book-keepers, cashiers, Females.	Errand boys.	Miscellaneous.	TOTALS.	
		Male.	Female.				Number.	Per cent.
\$25.00 per wk. and over								
20.00 but under \$25.00								
18.00 but under 20.00								
15.00 but under 18.00	2	10					12	2.96
13.00 but under 15.00	2						2	.49
12.00 but under 13.00	12	22				6	40	9.86
11.00 but under 12.00	2	4					6	1.48
10.00 but under 11.00	40	38		2			80	19.70
9.00 but under 10.00	32	8				2	42	10.35
8.00 but under 9.00	22	40		2			64	15.77
7.00 but under 8.00	16	26		2			42	10.35
6.00 but under 7.00	18	26	4	2			50	12.31
5.50 but under 6.00								
5.00 but under 5.50	2	10	2	2			16	3.94
4.50 but under 5.00		2					2	.49
4.00 but under 4.50	2	14			2		18	4.43
3.50 but under 4.00								
3.00 but under 3.50		8	4		4		16	3.94
2.50 but under 3.00		2			6		8	1.97
2.00 but under 2.50		4			2		6	1.47
1.50 but under 2.00		2					2	.49
Under \$1.50								
Totals	150	216	10	8	14	8	406	100.00
Percentages	36.95	53.21	2.46	1.97	3.44	1.97	100.00	

DRUGS.
(classified weekly earnings.)

Classification of wages.			Druggists and assistants.	Clerks.		Book-keepers, etc.		Traveling men.	Errand boys.	Apprentices.	Miscellaneous.	Totals.	
				Males.	Females.	Males.	Females.					Number.	Per cent
\$25.00	per	wk. and over.											
20.00	but	under \$25.00	16			4		12				32	2.59
18.00	but	under 20.00											
15.00	bnt	under 18.00	64	4		6		18			2	94	7.63
13.00	but	under 15.00	32	10								42	3.41
12.00	but	under 13.00	62	24		4		8				98	7.96
11.00	but	under 12.00	16	14		2					4	36	2.92
10.00	hut	under 11.00	68	00			4				8	140	11.36
9.00	but	under 10.00	20	20		2					14	56	4.55
8.00	hut	under 9.00	30	54			6				2	92	7.47
7.00	but	under 8.00	34	28				2		2	6	72	5.85
6.00	but	under 7.00	18	50	12		4			2	12	98	7.96
5.50	but	under 6.00	2	2	6					2		12	.97
5.00	but	under 5.50	16	46			2			12	4	80	6.49
4.50	but	under 5.00	6	2	4							12	.97
4.00	but	under 4.50	16	30	2		2			6	14	74	6.01
3.50	but	under 4.00	4		2			8		10		24	1.94
3.00	bnt	under 3.50	12	28	4			36		34		114	9.25
2.50	but	under 3.00	6	14	2			12		16		50	4.06
2.00	but	under 2.50						34		38	2	74	6.01
1.50	but	under 2.00						4		6		10	.81
Under	\$1.50							8		14		22	1.79
Totals			422	396	32	18	18	38	110	150	58	1,232	100.00
Percentages			34.25	31.33	2.59	1.46	1.46	3.09	8.93	12.18	4.71	100.00	.....

DRY GOODS.
(classified weekly earnings.)

Classification of wages.			Clerks.		Book-keepers, etc.		Cash boys & girls.		Miscellaneous.		Totals.		
			Males.	Females.	Males.	Females.	Milliners.	Boys.	Girls.	Males.	Females.	Number.	Per cent.
\$25.00	per wk. and over.	8	.....	4	.....	2	.....	2	.....	10	.33
20.00	but under \$25.00	8	.....	.....	.....	.....	.....	.....	.....	14	.45
18.00	but under 20.00	16	2	.....	.....	6	.....	.....	.....	24	.78
15.00	but under 18.00	98	18	6	.....	4	.....	4	.....	130	4.21
13.00	but under 15.00	46	6	2	.....	.....	.....	2	.....	56	1.82
12.00	but under 13.00	110	10	4	4	2	.....	.....	.....	130	4.21
11.00	but under 12.00	4	2	2	.....	4	.....	.....	.....	12	.38
10.00	but under 11.00	140	56	4	6	4	.....	6	.....	216	7.50
9.00	but under 10.00	34	26	.....	6	2	.....	4	4	76	2.47
8.00	but under 9.00	58	106	.....	6	10	.....	16	.....	196	6.35
7.00	but under 8.00	56	118	2	8	4	.....	20	.....	208	6.74
6.00	but under 7.00	56	356	.....	20	4	.....	6	.....	442	14.33
5.50	but under 6.00	12	52	.....	.....	.....	.....	.....	.....	64	2.07
5.00	but under 5.50	42	318	.....	18	4	.....	2	12	396	12.84
4.50	but under 5.00	8	92	.....	6	2	.....	2	2	112	3.63
4.00	but under 4.50	30	164	.....	10	.....	.....	18	8	230	7.46
3.50	but under 4.00	6	100	.....	6	2	.....	4	2	120	3.88
3.00	but under 3.50	32	208	.....	2	4	2	10	54	346	11.21	
2.50	but under 3.00	12	68	.....	.....	.....	6	4	12	102	3.30
2.00	but under 2.50	10	30	.....	.....	.....	72	18	6	138	4.47
1.50	but under 2.00	2	6	.....	.....	.....	10	40	.....	58	1.83
Under \$1.50		2	.....	.....	.....	.....	2	2	.....	6	.19
Totals			790	1,738	24	92	54	92	78	114	47	3,086	100.00
Percentages			25.60	56.32	.78	2.98	1.75	2.98	2.53	4.67	2.39	100.00

GENERAL STORES.
(classified weekly earnings.)

Classification of wages.	Managers.	Clerks.		Book-keepers.		Delivery men.	Teamsters.	Miscellaneous.		Totals.	
		Males.	Females.	Males.	Females.			Males.	Females.	Number.	Per cent.
\$25.00 per wk. and over.....	4	.....	.....	2	.....	.....	.....	.....	.....	6	0.16
20.00 but under 25.00.....	6	2	.....	.....	.....	.....	.....	.....	.....	10	0.26
18.00 but under 20.00.....	6	6	.....	.....	.....	.....	.....	.....	4	22	0.56
15.00 but under 18.00.....	13	43	.....	6	.....	.....	.....	.....	10	82	2.13
13.00 but under 15.00.....	8	30	.....	2	.....	.....	.....	2	.....	42	1.08
12.00 but under 13.00.....	10	140	.....	16	.....	.....	6	10	8	190	4.91
11.00 but under 12.00.....	6	54	2	2	2	2	.....	.....	.....	68	1.76
10.00 but under 11.00.....	4	306	6	10	2	2	36	10	.....	276	7.13
9.00 but under 10.00.....	.....	182	12	4	6	2	6	20	2	234	6.04
8.00 but under 9.00.....	2	350	20	.....	12	10	2	14	.....	510	13.18
7.00 but under 8.00.....	.....	276	53	6	12	14	6	72	6	450	11.63
6.00 but under 7.00.....	.....	352	163	4	12	70	14	20	.....	640	16.54
5.50 but under 6.00.....	.....	26	36	.....	.....	.....	2	.....	.....	64	1.66
5.00 but under 5.50.....	.....	172	184	2	8	24	4	6	2	402	10.39
4.50 but under 5.00.....	.....	46	48	.....	2	4	2	8	.....	110	2.84
4.00 but under 4.50.....	.....	70	126	.....	4	20	2	20	.....	242	6.26
3.50 but under 4.00.....	.....	36	50	.....	2	.....	.....	10	.....	98	2.54
3.00 but under 3.50.....	.....	64	144	.....	.....	10	2	10	4	224	5.79
2.50 but under 3.00.....	.....	28	26	.....	4	8	.....	2	.....	63	1.76
2.00 but under 2.50.....	.....	12	70	.....	.....	4	.....	22	8	116	2.99
1.50 but under 2.00.....	.....	2	8	.....	.....	.....	.....	.....	.....	10	0.26
Under \$1.50.....	.....	.....	4	.....	2	.....	.....	.....	.....	6	0.16
Totals.....	64	2,192	962	63	68	163	43	240	66	3,870	100.00
Percentages.....	1.06	56.64	24.86	1.60	1.76	4.34	1.24	6.20	1.70	100.00	.....

GROCERIES.
(classified weekly earnings.)

Classification of wages.	Traveling men.	Clerks.		Book-keepers, etc.		Delivery men.	Teamsters.	Porters.	Miscellaneous.		Totals.	
		Males.	Females.	Males.	Females.				Males.	Females.	Number.	Per cent.
\$25.00 per wk. and over.....	124	20	.....	6	.....	.....	.....	.....	.....	.....	150	5.38
20.00 but under 25.00.....	44	23	.....	8	.....	.....	.....	.....	.....	.....	80	2.87
18.00 but under 20.00.....	.....	.....	.....	4	.....	.....	.....	.....	2	.....	12	.44
15.00 but under 18.00.....	8	66	.....	16	.....	.....	12	.....	6	.....	103	3.88
13.00 but under 15.00.....	4	78	.....	6	.....	.....	.....	.....	2	.....	90	3.24
12.00 but under 13.00.....	6	136	.....	12	.....	8	8	6	8	.....	184	6.61
11.00 but under 12.00.....	8	53	.....	6	2	2	.....	2	6	.....	84	3.03
10.00 but under 11.00.....	2	250	4	6	12	13	24	22	32	.....	370	13.29
9.00 but under 10.00.....	.....	150	2	.....	4	18	12	56	6	.....	243	8.90
8.00 but under 9.00.....	2	200	6	4	22	50	16	6	22	.....	323	11.79
7.00 but under 8.00.....	.....	110	4	.....	14	40	10	6	4	.....	193	6.75
6.00 but under 7.00.....	.....	146	36	2	16	70	2	6	38	.....	316	11.86
5.50 but under 6.00.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5.00 but under 5.50.....	.....	118	64	.....	14	50	2	.....	42	.....	296	10.42
4.50 but under 5.00.....	.....	16	6	.....	.....	4	.....	.....	.....	.....	26	.93
4.00 but under 4.50.....	.....	64	38	.....	8	24	.....	.....	12	.....	146	5.24
3.50 but under 4.00.....	.....	.....	.....	.....	.....	14	.....	.....	2	.....	16	.57
3.00 but under 3.50.....	.....	34	26	.....	8	30	.....	.....	6	.....	104	3.73
2.50 but under 3.00.....	.....	4	16	.....	2	8	.....	.....	.....	.....	30	1.08
2.00 but under 2.50.....	.....	4	4	.....	4	.....	.....	.....	.....	.....	12	.47
1.50 but under 2.00.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	2	.07
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	204	1,482	206	64	112	333	86	104	188	.....	2,784	100.00
Percentages.....	7.33	53.24	7.39	2.29	4.03	12.15	3.09	3.73	6.75	.....	100.00	.....

HARDWARE.

(classified weekly earnings.)

Classification of wages.	Man- gers and forem ⁿ .	Clerks.		Bookkeep- ers, etc.		Tin- smiths.	Miscellaneous.	Totals.	
		Males.	Females.	Males.	Females.			Number.	Per cent.
\$25.00 per wk. and over.....	10	6	.....	4	.....	.....	.....	20	.83
20.00 but under \$25.00.....	.....	8	.....	.....	.....	.....	.....	8	1.33
18.00 but under 20.00.....	.....	14	.....	10	.....	4	8	36	1.49
16.00 but under 18.00.....	6	60	.....	10	.....	56	4	136	5.60
13.00 but under 15.00.....	.....	12	.....	.....	.....	24	2	38	1.57
12.00 but under 13.00.....	2	114	.....	16	2	190	74	393	16.38
11.00 but under 12.00.....	6	76	.....	6	.....	.....	16	104	4.28
10.00 but under 11.00.....	4	138	.....	8	4	202	50	406	16.71
9.00 but under 10.00.....	2	76	.....	4	4	90	146	322	13.26
8.00 but under 9.00.....	.....	68	.....	8	12	30	92	210	8.66
7.00 but under 8.00.....	.....	118	.....	4	8	52	96	278	11.45
6.00 but under 7.00.....	.....	106	4	.....	14	22	76	222	9.13
5.50 but under 6.00.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5.00 but under 5.50.....	.....	52	10	.....	6	14	22	104	4.27
4.50 but under 5.00.....	.....	18	8	.....	.....	.....	16	42	1.73
4.00 but under 4.50.....	.....	10	.....	.....	4	6	.....	20	.83
3.50 but under 4.00.....	.....	.....	.....	.....	.....	.....	10	10	.41
3.00 but under 3.50.....	.....	6	.....	.....	.....	.....	28	40	1.64
2.50 but under 3.00.....	.....	4	.....	.....	2	4	6	16	.65
2.00 but under 2.50.....	.....	.....	4	.....	.....	.....	8	12	.49
1.50 but under 2.00.....	.....	2	.....	.....	.....	4	.....	8	.32
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	30	888	28	70	56	704	654	2,430	100.00
Percentages.....	1.23	36.55	1.15	2.88	2.30	28.98	26.91	100.00	.....

The foregoing six tables show in order the "Classified Weekly Earnings" in the following retail trades: Boots and Shoes, Drugs, Dry Goods, General Stores, Groceries, and Hardware. The tables are comprehensive, each one giving for the industry it represents the earnings, not only for the total number of persons reported, but for those in each occupation. As an illustration of what the presentations show we may turn back to the one for Boots and Shoes. Here we find the occupations classified as Shoemakers or repairers, Clerks (male and female), Bookkeepers and Cashiers, Errand boys, and Miscellaneous hands. For those in each of these occupations the Classified Earnings are given. The tables also show the earnings for all when combined together with the per cent. of the number receiving each specified sum. Thus, two shoemakers and ten clerks receive \$15.00 but under \$18.00 per week, while of the whole number reported twelve persons, or 2.96 per cent. of the total received this sum. Turning to the foot of the table we

find that the number of shoemakers reported was 150, or 36.95 per cent. of the whole number employed, and so on. The advantages connected with detailed presentations of this kind as compared with those where only the total for the industry are given, are many. In the first place it affords chances for comparisons as between the different occupations in the same industry. Then again it enables comparisons as between the same occupations in different industries. Detailed presentations are the most valuable from almost any point of view. No attempt, however, has been made here to make the comparisons mentioned. The analyses which follow are limited to the total number for each industry, and for this purpose the totals are again presented.

The next exhibit shows the total male persons in each industry who received classified weekly earnings.

TOTAL MALE PERSONS RECEIVING CLASSIFIED WEEKLY EARNINGS.

(6 Industries.)

Classification of weekly wages.	Hard-ware.	Drug-gists.	Gro-ceries.	Dry goods.	Gen-eral stores.	Boots and shoes.	Tot als
	No. of males.	No. of males.	No. of males.	No. of males.	No. of males.	No. of males.	
\$25.00 per wk. and over.....	20	.....	150	10	6	.....	186
20.00 and under \$25.00.....	8	32	80	12	10	.....	142
18.00 but under 20.00.....	36	.....	12	16	18	.....	82
15.00 but under 18.00.....	136	94	108	108	72	12	530
13.00 but under 15.00.....	38	42	84	50	42	2	258
12.00 but under 13.00.....	396	98	184	114	182	40	1,014
11.00 but under 12.00.....	104	36	82	6	64	6	293
10.00 but under 11.00.....	402	136	354	150	258	78	1,378
9.00 but under 10.00.....	318	56	242	38	214	42	910
8.00 but under 9.00.....	198	86	300	74	478	62	1,198
7.00 but under 8.00.....	270	72	170	78	374	42	1,006
6.00 but under 7.00.....	204	82	264	62	460	44	1,116
5.50 but under 6.00.....	.....	6	.....	12	28	.....	46
5.00 but under 5.50.....	88	78	212	44	208	12	642
4.50 but under 5.00.....	34	8	20	10	60	2	134
4.00 but under 4.50.....	16	70	100	48	112	18	364
3.50 but under 4.00.....	10	22	16	8	36	.....	92
3.00 but under 3.50.....	40	110	70	88	76	12	396
2.50 but under 3.00.....	14	48	12	18	36	8	136
2.00 but under 2.50.....	8	74	4	88	38	6	218
1.50 but under 2.00.....	6	10	2	12	2	2	34
Under \$1.50.....	.....	22	.....	4	.....	.....	26
Totals.....	2,346	1,182	2,466	1,050	2,774	388	10,206
Percentages.....	22.99	11.58	24.16	10.29	27.18	3.80	100.00

TOTAL FEMALE PERSONS RECEIVING CLASSIFIED WEEKLY EARNINGS.
(6 Industries.)

Classification of weekly wages.	Hard-ware.	Drug-gists.	Gro-ceries.	Dry goods.	Gen'l stores.	Boots and shoes.	Totals.
	No. of females.	No. of females.	No. of females.	No. of females.	No. of females.	No. of females.	
\$25.00 per wk. and over.....				2			2
20.00 but under \$25.00.....				8	4		12
15.00 but under 20.00.....				22	10		32
13.00 but under 15.00.....			6	6			12
12.00 but under 13.00.....	2			16	8		26
11.00 but under 12.00.....			2	6	4		12
10.00 but under 11.00.....	4	4	16	66	18	2	110
9.00 but under 10.00.....	4		6	38	20		68
8.00 but under 9.00.....	12	6	28	122	32	2	202
7.00 but under 8.00.....	8		18	130	76		232
6.00 but under 7.00.....	18	16	52	380	180	6	652
5.50 but under 6.00.....		6		52	36		94
5.00 but under 5.50.....	16	2	78	352	194	4	646
4.50 but under 5.00.....	8	4	6	102	50		170
4.00 but under 4.50.....	4	4	46	182	130		366
3.50 but under 4.00.....		2		112	62		176
3.00 but under 3.50.....		4	34	258	148	4	448
2.50 but under 3.00.....	2	2	18	84	32		138
2.00 but under 2.50.....	4		8	50	78		140
1.50 but under 2.00.....	2			46	8		56
Under \$1.50.....				2	6		8
Totals.....	84	50	318	2,036	1,096	18	3,602
Percentages.....	2.33	1.39	8.83	56.52	30.43	.50	100.00

TOTAL MALE AND FEMALE PERSONS RECEIVING CLASSIFIED WEEKLY EARNINGS.
(6 Industries.)

Classification of weekly wages.	Hard-ware.	Drug-gists.	Gro-ceries.	Dry goods.	Gen'l stores.	Boots and shoes.	Totals.
	No. of employes.	No. of employes.	No. of employes.	No. of employes.	No. of employes.	No. of employes.	
\$25.00 per wk. and over.....	20		150	10	6		186
20.00 but under \$25.00.....	8	32	80	14	10		144
18.00 but under 20.00.....	36		12	24	22		94
15.00 but under 18.00.....	136	94	108	130	82	12	562
13.00 but under 15.00.....	38	42	90	56	42	2	270
12.00 but under 13.00.....	398	98	184	130	190	40	1,040
11.00 but under 12.00.....	104	36	84	12	68	6	310
10.00 but under 11.00.....	406	140	370	716	276	80	1,488
9.00 but under 10.00.....	322	56	248	76	224	42	978
8.00 but under 9.00.....	210	92	328	196	510	64	1,400
7.00 but under 8.00.....	278	72	188	208	450	42	1,288
6.00 but under 7.00.....	222	96	316	442	640	50	1,768
5.50 but under 6.00.....		12		64	64		140
5.00 but under 5.50.....	104	80	280	396	402	16	1,288
4.50 but under 5.00.....	42	12	26	112	110	2	304
4.00 but under 4.50.....	20	74	146	230	242	18	730
3.50 but under 4.00.....	10	24	16	120	98		268
3.00 but under 3.50.....	40	114	104	346	224	16	844
2.50 but under 3.00.....	16	50	30	102	68	8	274
2.00 but under 2.50.....	12	74	12	138	116	6	358
1.50 but under 2.00.....	8	10	2	58	10	2	90
Under \$1.50.....		22		6	6		34
Totals.....	2,430	1,232	2,784	3,066	3,870	406	13,806
Percentages.....	17.60	8.92	20.16	22.34	28.02	2.96	100.00

In the preceding three exhibits are found the "Classified Weekly Earning" of 2,346 males, 84 females, or 2,430 persons in the Hardware trade; 1,182 males, 50 females, or 1,232 persons in the Drug trade; 2,466 males and 318 females, or 2,784 persons in the Grocery trade; 1,050 males and 2,036 females, or 3,086 persons in the Dry Goods trade; 2,774 males and 1,096 females, or 3,870 persons in General Stores, and 388 males and 18 females, or 406 persons in the Boot and Shoe trade. When combined, this makes 10,206 males, 3,602 females, or a total of 13,808 persons; and of these also the earnings are shown.

As little has been said about the relative number of males and females in each industry, it may be well to add something here. From above figures, and from the tables, it is figured out that the females constituted 3.46 per cent. in the Hardware line; 4.89 per cent. in Drugs; 11.43 per cent. in Groceries; 65.97 per cent. in Dry Goods; 28.32 per cent. in General Stores; 4.43 per cent. in Boots and Shoes, and 26.09 per cent. in the total for all these trades when combined. In the Dry Goods trade there were two women employes to one man. This, however, is an exception so far as the industries included here are concerned. In General Stores the per cent. of women was quite large, but far from as great as in Dry Goods. In the other industries it was perhaps as small as was expected.

The three exhibits which follow show the per cent. of those who received Classified Weekly Earnings. It will be noticed that these exhibits differ from the preceding ones only in this, that instead of the actual number they show the per cent. of same of the total:

PER CENT. OF MALES.

[illegible]

PER CENT. OF FEMALES.

[illegible]

PER CENT. OF TOTALS.

Classification of weekly wages.	Hard- ware.	Drug- gists.	Gro- ceries.	Dry goods.	Gen'l stores.	Boots and shoes	Per ct. of total em- ployes.
	Per ct. of total.	Per ct. of total.	Per ct. of total.	Per ct. of total.	Per ct. of total.	Per ct. of total.	
\$25.00 per wk. and over.....	.32	.....	5.38	.32	.15	.....	1.34
20.00 but under \$25.00.....	.33	2.60	2.87	.45	.26	.....	1.04
18.00 but under 20.00.....	1.48	.....	.43	.77	.57	.....	.63
15.00 but under 18.00.....	5.59	7.63	3.87	4.22	2.12	2.95	4.07
13.00 but under 15.00.....	1.56	3.41	3.23	1.82	1.09	.50	1.95
12.00 but under 13.00.....	16.33	7.96	6.60	4.22	4.91	9.85	7.58
11.00 but under 12.00.....	4.28	2.92	3.01	.39	1.76	1.48	2.24
10.00 but under 11.00.....	16.71	11.36	13.28	7.00	7.13	19.70	10.73
9.00 but under 10.00.....	13.25	4.54	8.98	2.46	6.05	10.34	7.08
8.00 but under 9.00.....	8.65	7.47	11.78	6.35	13.18	15.76	10.14
7.00 but under 8.00.....	11.44	5.84	6.75	6.74	11.63	10.34	8.97
6.00 but under 7.00.....	9.14	7.95	11.35	14.32	16.53	12.32	12.81
5.50 but under 6.00.....	.....	.98	.....	2.07	1.65	.....	1.02
5.00 but under 5.50.....	4.28	6.49	10.42	12.83	10.39	3.94	9.33
4.50 but under 5.00.....	1.73	.98	.93	3.63	2.84	.50	2.39
4.00 but under 4.50.....	.32	6.00	5.24	7.45	6.25	4.43	5.29
3.50 but under 4.00.....	.42	1.95	.57	3.89	2.54	.....	1.04
3.00 but under 3.50.....	1.65	9.26	3.73	11.21	5.79	3.94	6.11
2.50 but under 3.00.....	.66	4.06	1.08	3.31	1.75	1.97	1.99
2.00 but under 2.50.....	.49	6.00	.43	4.47	3.00	1.48	2.06
1.50 but under 2.00.....	.32	.81	.07	1.88	.26	.50	.65
Under \$1.50.....	.....	1.79	.....	.20	.15	.....	.24
Percentages	100.	100.	100.	100.	100.	100.	100.

In the preceding three exhibits we find the per cent. of the total of the male, female and total of both who received "Classified Weekly Earnings" in each industry included here. The exhibits are comprehensive. In fact, they go into greater detail in the classification of the earnings than would seem necessary merely for comparative purposes. For this reason and also in order to conform to census and other presentations, the classifications were reduced in number, and as thus reduced and arranged, presented in the three exhibits which follow. The first presentation shows, separately, the male, female, and total persons employed by the above six industries. The second gives the per cent. of these in each case, and the third is devoted to a comparison of the earnings as between these industries:

NUMBER OF MALES, FEMALES AND TOTAL PERSONS RECEIVING
CLASSIFIED WEEKLY EARNINGS IN SIX MERCANTILE INDUSTRIES.

Classification of weekly earnings.	Number of males.	Number of females.	Total number.
Under \$5.00 per week.....	1,400	1,502	2,902
\$5.00 but under \$6.00.....	688	740	1,428
6.00 but under 7.00.....	1,116	652	1,768
7.00 but under 8.00.....	1,006	232	1,238
8.00 but under 9.00.....	1,198	202	1,400
9.00 but under 10.00.....	910	68	978
10.00 but under 12.00.....	1,676	122	1,798
12.00 but under 15.00.....	1,272	38	1,310
15.00 but under 20.00.....	612	44	656
20.00 and over.....	328	2	330
Totals	10,206	3,602	13,808
Percentages	73.91	26.09	100.00

PER CENT. OF MALES, FEMALES AND TOTAL PERSONS IN SIX MERCANTILE INDUSTRIES WHO RECEIVED CLASSIFIED WEEKLY EARNINGS.

Classification of weekly earnings.	Males per cent.	Females per cent.	Total per cent.
Under \$5.00 per week.....	13.73	41.71	21.02
\$5.00 but under \$6.00.....	6.74	20.54	10.35
6.00 but under 7.00.....	10.93	18.10	12.81
7.00 but under 8.00.....	9.85	6.44	8.97
8.00 but under 9.00.....	11.73	5.61	10.14
9.00 but under 10.00.....	8.90	1.89	7.08
10.00 but under 12.00.....	16.44	3.33	13.02
12.00 but under 15.00.....	12.45	1.05	9.48
15.00 but under 20.00.....	6.00	1.22	4.75
20.00 and over	3.23	.06	2.33
Total percentages	100.00	100.00	100.00

The two preceding tables represent the situation after reducing the classifications so as to correspond to those of the census. The first table in order gives the number and the second the per cent. A comparison of these tables with those from which they were reduced will reveal many improvements in the former. The classifications are fewer but so arranged as to show almost as much of the condition of earnings as in the former tables where more numerous. The earnings for the different grades of workers are nearly always tending towards a certain point in each case. If these points are observed in a classification of the earnings, a few classes may be made to express as much about the condition as a greater number. The above tables are

made up on this basis, and it is believed they will prove satisfactory.

The first class in order, in the above tables, is that of "Under \$5.00 per week." While this is a small earning, so small, indeed that it is hard to see how anybody can live on it, the class includes 2,902 persons, or 21.02 per cent. of the total. It is, of course, true that practically all of these are children, young persons, and women, and that a large proportion of them do not depend entirely upon their own earnings for their support. This, however, does not help matters with those who must live upon this earning. Comparing the number in this class with that of either of the other classes it is found to be much the largest in the table. This is significant. The class nearest to it is that of \$10.00 but under. \$12.00. This class, however, has only 1,798 persons, or 13.02 per cent. of the total. There are several other classes which show up quite well, but the two mentioned are the highest in point of the number. The fewest number of employes are found in the highest-paid classes. Thus we find that the two last classes in the tables include only 4.75 and 2.38 per cent. of the total.

Here, as in all other wage tables of this kind, the highest proportion of females is found for the classes with the lowest earnings. In the above tables this fact is particularly prominent.

It is not until the wages reach and exceed one dollar per day that this situation is reversed. The relative position of the two sexes with respect to earnings is also illustrated by the following facts: Of the total number of females employed, 41.71 per cent. received less than \$5.00 per week, while, of the males, only 13.73 per cent. earned less than this amount.

In the next exhibit the classifications are reduced to a still smaller number. Here we find the per cent. of the total in each trade who earned, respectively, \$9.00, \$7.00, \$6.00, \$5.00 and over, and less than \$5.00 per week. This presentation is included in order to compare the earnings in each industry:

COMPARISONS OF CLASSIFIED WEEKLY EARNINGS IN SIX RETAIL MERCANTILE INDUSTRIES, AS COMPILED FROM THE PRECEDING PRESENTATIONS.

CLASSIFICATION OF INDUSTRIES.	PER CENT. OF PERSONS OF THE TOTAL RECEIVING				
	\$9.00 per week and over.	\$7.00 per week and over.	\$6.00 per week and over.	\$5.00 per week and over.	Under \$5.00 per week.
Boots and shoes.....	44.82	70.92	83.24	87.18	12.82
Drugs	40.42	53.73	61.68	69.15	30.85
Dry goods	21.65	34.74	49.06	63.96	36.04
General stores	24.04	48.85	65.38	77.42	22.53
Groceries	47.85	66.18	77.53	87.95	12.05
Hardware	60.40	80.49	89.63	93.91	6.09
Above six industries.....	36.71	55.82	68.63	78.93	21.02

As seen, six mercantile trades are included in the preceding exhibit. For each of these we find the per cent. of the total of those who earned a specified sum or over per week. We also find the same facts for all of these industries when combined:

It is interesting to note here not only the situation as regards earnings in each line of trade, but when compared to each other. Boots and Shoes is the first industry to appear. In this instance we find that 44.82 per cent. of the total number received \$9.00 per week and over; that 70.92 per cent. received \$7.00 and over; that 83.24 per cent. received \$6.00 and over; that 87.18 per cent. received \$5.00 and over, and that 12.82 per cent. of the whole number received less than \$5.00 per week. Comparing these facts with those for other industries, it will be noticed that the Boot and Shoe trade shows a somewhat higher earnings than Drugs, Dry Goods, and General Stores; a lower earnings than Hardware, and about the same as Groceries. In fact, the closeness between Boots and Shoes and Groceries in point of earnings is rather marked. There are many circumstances which contribute to the bringing about of this. In these two lines of retail trade about the same quality of help is required, and in neither of them is the proportion of females and children employees very large. In Dry Goods the earning is the lowest and is closely followed by General Stores. The lower earnings in these cases can, of course, largely be attributed to the high proportion of females and chil-

dren among the employes. The Drug trade presents a feature peculiarly its own. Pharmacy partakes of the professions, and registered pharmacists are fairly well paid. On the other hand, most drug stores seem to have their low paid clerk, apprentice, or errand boy. When all employes in such places are included it is of course plain that the average for all should be greatly reduced. In the basic tables, however, each occupation is presented separately, and opportunities are thus afforded those who may desire it to study each occupation by itself alone, as well as in connection with others.

The presentation for all, or the six industries or lines of retail trade, show 36.71 per cent. received \$9.00 per week or over; that 55.82 per cent. received \$7.00 or over; that 68.63 per cent. received \$6.00 or over; that 78.98 per cent. received \$5.00 or over; and that 21.02 per cent. received less than \$5.00 per week. Taken as a whole it can be said that in Drugs, Dry Goods and General Stores the average earnings is lower than the average for all, while in Boots and Shoes, Groceries and Hardware the earnings are somewhat higher than the average for all.

The above conclusions have been drawn from the reports of 3,754 establishments, employing 13,808 persons, or about 46 per cent. of the total in these lines in the state.

The three exhibits which follow show, for each trade or industry included, the per cent. of the persons under each class of earnings as based upon the total number of persons for the six industries covered by this investigation. These exhibits are comprehensive and are included to aid those who may desire to carry the comparison of the facts further than has been done in the preceding pages. Those using the facts, however, should bear in mind that, as said, the per cent. in each case is the relation which the number of persons in that case bears to the total number of persons for the six trades, or the 13,808 persons employed in all of them.

MALES.

Classification of weekly wages.	Hard-ware.	Drug-gists.	Gro-ceries.	Dry goods.	Gen'l stores.	Boot and shoes.	Total per ct. males.
	Males per ct.	Males per ct.	Males per ct.	Males per ct.	Males per ct.	Males per ct.	
\$25.00 per week and over.....	.20	.....	1.47	.10	.06	.....	1.83
20.00 but under \$25.00.....	.08	.31	.78	.12	.11	.....	1.40
18.00 but under 20.00.....	.35	.....	.12	.16	.18	.....	.31
15.00 but under 18.00.....	1.33	.92	1.06	1.06	.70	.12	5.19
13.00 but under 15.00.....	.37	.41	.82	.49	.41	.02	2.52
12.00 but under 13.00.....	3.88	.96	1.80	1.11	1.79	.39	9.93
11.00 but under 12.00.....	1.02	.36	.79	.06	.63	.06	2.92
10.00 but under 11.00.....	3.94	1.34	3.48	1.47	2.53	.76	13.52
9.00 but under 10.00.....	3.11	.55	2.37	.37	2.09	.41	8.90
8.00 but under 9.00.....	1.94	.84	2.94	.72	4.68	.61	11.73
7.00 but under 8.00.....	2.65	.70	1.67	.76	3.66	.41	9.85
6.00 but under 7.00.....	2.00	.80	2.59	.61	4.51	.42	10.93
5.50 but under 6.00.....	.....	.06	.....	.12	.27	.....	.45
5.00 but under 5.50.....	.86	.77	2.07	.43	2.04	.12	6.29
4.50 but under 5.00.....	.33	.08	.20	.10	.59	.02	1.32
4.00 but under 4.50.....	.16	.68	.98	.47	1.10	.13	3.57
3.50 but under 4.00.....	.10	.21	.16	.08	.36	.....	.90
3.00 but under 3.50.....	.39	1.09	.68	.86	.74	.12	3.88
2.50 but under 3.00.....	.14	.46	.12	.18	.35	.08	1.33
2.00 but under 2.50.....	.08	.73	.04	.86	.37	.06	2.14
1.50 but under 2.00.....	.06	.10	.02	.12	.02	.02	.84
Under \$1.50.....	.....	.21	.....	.04	.....	.....	.25
Percentages.....	22.99	11.58	24.16	10.29	27.18	3.80	100.00

FEMALES.

Classification of weekly wages.	Hard-ware.	Drug-gists.	Gro-ceries.	Dry goods.	Gen'l stores.	Boots and shoes.	Total per ct. females.
	Fe-males per ct.	Fe-males per ct.	Fe-males per ct.	Fe-males per ct.	Fe-males per ct.	Fe-males per ct.	
\$25.00 per week and over.....	.....	.....	.....	.....	.....	.....	.....
20.00 but under \$25.00.....	.....	.....	.....	.06	.....	.....	.06
18.00 but under 20.00.....	.....	.....	.....	.22	.11	.....	.33
15.00 but under 18.00.....	.....	.....	.....	.61	.23	.....	.89
13.00 but under 15.00.....	.....	.....	.16	.17	.....	.....	.33
12.00 but under 13.00.....	.05	.....	.....	.44	.23	.....	.72
11.00 but under 12.00.....	.....	.....	.06	.16	.11	.....	.33
10.00 but under 11.00.....	.11	.11	.44	1.83	.50	.06	3.06
9.00 but under 10.00.....	.11	.....	.17	1.06	.56	.....	1.89
8.00 but under 9.00.....	.33	.17	.78	3.39	.89	.06	5.61
7.00 but under 8.00.....	.22	.....	.51	3.60	2.11	.....	6.44
6.00 but under 7.00.....	.50	.44	1.45	10.55	5.00	.16	18.10
5.50 but under 6.00.....	.....	.17	.....	1.44	1.00	.....	2.61
5.00 but under 5.50.....	.45	.06	2.14	9.78	5.38	.12	17.93
4.50 but under 5.00.....	.22	.11	.16	2.83	1.40	.....	4.72
4.00 but under 4.50.....	.12	.11	1.28	5.05	3.61	.....	10.17
3.50 but under 4.00.....	.....	.06	.....	3.11	1.72	.....	4.89
3.00 but under 3.50.....	.....	.11	.94	7.16	4.11	.11	12.43
2.50 but under 3.00.....	.06	.05	.51	2.33	.89	.....	3.83
2.00 but under 2.50.....	.12	.....	.23	1.40	2.14	.....	3.89
1.50 but under 2.00.....	.05	.....	.....	1.28	.22	.....	1.55
Under \$1.50.....	.....	.....	.....	.06	.17	.....	.23
Percentages.....	2.23	1.39	8.83	56.52	30.43	.50	100.00

TOTAL.

Classification of weekly wages.	Hard- ware.	Drug- gists.	Dry goods.	Gro- ceries.	Gen'l stores.	Boots and shoes.	Total per ct. of all em- ployes.
	Per ct. of all em- ployes.	Per ct. of all em- ployes.	Per ct. of all em- ployes.	Per ct. of all em- ployes.	Per ct. of all em- ployes.	Per ct. of all em- ployes.	
\$25.00 per week and over.....	.14	.....	1.09	.07	.04	.....	1.24
20.00 but under 25.00.....	.06	.23	.58	.10	.07	.....	1.04
18.00 but under 20.00.....	.26	.....	.09	.17	.16	.....	.68
15.00 but under 18.00.....	.98	.68	.79	.94	.59	.09	4.07
13.00 but under 15.00.....	.28	.30	.65	.41	.30	.01	1.96
12.00 but under 13.00.....	2.88	.71	1.33	.94	1.38	.29	7.53
11.00 but under 12.00.....	.75	.26	.61	.09	.49	.04	2.24
10.00 but under 11.00.....	2.94	1.02	2.68	1.56	2.00	.58	10.73
9.00 but under 10.00.....	2.33	.41	1.80	.55	1.69	.30	7.06
8.00 but under 9.00.....	1.53	.66	2.36	1.42	3.70	.47	10.14
7.00 but under 8.00.....	2.02	.52	1.86	1.50	3.26	.31	8.97
6.00 but under 7.00.....	1.61	.71	2.29	3.20	4.63	.37	12.81
5.50 but under 6.00.....	.....	.08	.....	.47	.47	.....	1.02
5.00 but under 5.50.....	.76	.57	2.10	2.87	2.91	.12	9.33
4.50 but under 5.00.....	.30	.09	.19	.81	.80	.01	2.20
4.00 but under 4.50.....	.14	.54	1.06	1.67	1.75	.13	5.29
3.50 but under 4.00.....	.07	.17	.12	.87	.71	.....	1.94
3.00 but under 3.50.....	.29	.83	.75	2.50	1.63	.12	6.11
2.50 but under 3.00.....	.11	.37	.22	.74	.49	.06	1.99
2.00 but under 2.50.....	.09	.54	.08	1.00	.84	.06	3.60
1.50 but under 2.00.....	.06	.07	.01	.42	.08	.01	.65
Under \$1.50.....	.....	.10	.....	.04	.04	.....	.24
Percentages	17.60	8.92	20.16	22.34	23.02	2.96	100.00

EMPLOYMENT AND EARNINGS IN FOURTEEN SKILLED TRADES AND OF MINERS, QUARRY- MEN AND COAL-AND WOOD HANDLERS.

In the foregoing pages of this part—Part VI—have been presented the employment and earnings in certain manufacturing industries and in six lines, or industries, in the retail trade in this state. In these pages we find the “Classified Weekly Earnings;” “The Number Employed by the Hour, Day and Piece;” “The Number Employed Each Month,” etc., in fourteen so-called skilled trades, and of those employed in mines, quarries, and for handling coal and wood in this state in 1898.

The so-called fourteen trades are Bakers, Blacksmiths, Brick and Stone Masons, Carpenters and Builders, Carriage and Wagon Makers, Machinists, Marble and Granite Cutters, Merchant Tailors, Persons employed by General Contractors, Painters, Plumbers, Printers, etc., Tinsmiths, and Well Drillers.

The data, in each case, were obtained direct from the employers, or contractors, and covered all persons employed by them, whether skilled workmen or not. As many skilled hands, when engaged in their trade, must have tenders and helpers who earn little, if any, more than common laborers, and as much common labor is necessarily employed in most or all business of this kind, it appears that the earnings presented are not those of skilled labor alone, but of skilled labor along with all other help employed in their line. A contractor, for instance, employs so many skilled hands, so many helpers, and so many tenders and common laborers. In their reports of the earnings of those employed by them, the contractors were asked to include all their employes regardless of the actual occupation. From these facts it is readily seen that the persons included here can not by any means be exclusively regarded as skilled hands. This should be borne in mind by those who may use the facts presented in the tables which follow.

The main facts in each trade are presented in one table of three parts. The first part in order of these shows the classified

weekly earnings, first of all males 18 years and over; second, of all females 18 years and over; third, of all males under 18 years; and, fourth, of all females under 18 years of age, who were included in the reports. This part also has a column for the total number, in which the whole number employed, regardless of age and sex, are combined; and one column in which is found the per cent. of the total in each class as based upon the total number reported in that trade.

The second part is devoted to Hour, Day and Piece hands. It shows the number of persons in each of the sex and age classes given above who were employed by the Hour, Day and Piece. It also shows the total and percentage in each of these cases, as well as the number and per cent. in each sex and age class. In this last respect the figures for the first and second part necessarily corresponds.

The third part, in order, relates to the persons employed by months. It shows the average number of males, females, and total for both, who were employed each month throughout the year. It also shows the range of employment and unemployment. This table thus points out the range of employment during the year, and for this reason is of special value.

Besides those contained in the three parts described, many other facts were collected. Thus in foot notes under each table we find, for the year, the average days of employment, the average hours of labor in a day's work in summer and winter, the number of accidents, the total amount paid as wages and salaries respectively.

The average number of days in operation and the average hours in a day's work were obtained by dividing the sum of these facts for all establishments by the whole number of these establishments. The accidents given are the total number reported. It would have been interesting to know and to have been able to give the nature and details of each accident. This, however, was found to be out of the question, because the employers, while requested to report upon them in full, did not see fit to comply, except in a few cases. The figures representing the amount paid in wages and salaries is the sum reported by all the establishments included. The sums as they stand

are approximately correct. By dividing the amount paid as wages with the average number employed, as given at the foot of the table for persons employed by months, the average yearly earning to each worker may be obtained. These calculations, however, have not been carried out in each case. The main reason for omitting this is, that it could not be clearly made out whether the number of persons reported for each month consisted of wage earners only, as requested, or whether salaried persons also were included. The chances are that in this respect the employers reported according to instructions. On the other hand there was some evidence to the contrary. Any one who may desire the yearly earnings can easily obtain this sum in the way pointed out above.

The facts thus outlined are presented for each trade as well as for all when combined. All the facts for each industry are also found on one page. For the fourteen trades the basic data thus cover fourteen pages. In addition to this there is one page of summaries, or a table in which the fourteen tables are combined. After this follows a brief analysis with comparisons of the earnings in each trade.

The following facts showing the number of persons embraced indicate the extent and representative character of this investigation:

CLASSIFICATION OF INDUSTRIES.	NUMBER OF PERSONS EMPLOYED.		
	Males.	Females.	Totals.
Bakeries	746	338	1,084
Blacksmiths	673	14	686
Brick and stone masons.....	1,590		1,590
Carpenters and builders.....	5,733	30	5,763
Carriage and wagon makers.....	426		426
Machinists	558	21	579
Marble and granite cutters	434		434
Merchant tailors	1,028	228	1,256
General contractors	2,052		2,052
Painters	1,556	16	1,572
Plumbers	708	8	716
Printers	1,655	406	2,061
Tinsmiths	300		300
Well drivers	291		291
Totals	17,739	1,061	18,800

The preceding table shows that 17,739 male, 1,061 female, or a total of 18,800 persons are included in this inquiry. This does not, by any means, embrace the total number who are employed in these trades in the state,—in some cases the proportion of the representation is smaller than it ought to be—but enough are included to make these presentations representative of the situation. In fact, more skilled hands are included here than in any previous effort of this kind in this state of which there is any record. In this, as in all other cases, the data were carefully edited and compiled.

BAKERIES.

(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals	Per cent- ages.
\$25.00 per week and over..	2				2	.18
20.00 but under \$25.00.....	2				2	.18
18.00 but under 20.00.....	6				6	.66
15.00 but under 18.00.....	16				16	1.48
12.00 but under 15.00.....	30				30	2.77
12.00 but under 12.00.....	41				44	4.06
11.00 but under 12.00.....	54				54	4.99
10.00 but under 11.00.....	78	4			82	7.66
9.00 but under 10.00.....	128	2			130	11.99
8.00 but under 9.00.....	74	6			80	7.38
7.00 but under 8.00.....	64	8	2		74	6.83
6.00 but under 7.00.....	23	12	8		52	4.79
5.50 but under 6.00.....	18	3			26	2.39
5.00 but under 5.50.....	52	36	8		96	8.86
4.50 but under 5.00.....	24	22	6		52	4.79
4.00 but under 4.50.....	24	16	2		42	3.88
3.50 but under 4.00.....	6	48			54	4.99
3.00 but under 3.50.....	18	62	14	2	86	7.94
2.50 but under 3.00.....		60	18		78	7.19
2.00 but under 2.50.....		26	6	6	38	3.51
1.50 but under 2.00.....			10	28	38	3.51
Under \$1.50				2	2	.18
Totals	672	306	74	38	1,084	100.00
Percentages	61.99	27.67	6.83	3.51	100.00	

HOUR, DAY AND PIECE HANDS.

No. employed by the hour..	60	18	8		86	7.94
No. employed by the day..	608	278	66	38	990	91.83
No. employed on piece wk.	4	4			8	.78
Totals	672	300	74	38	1,084	100.00
Percentages	61.99	27.67	6.83	3.51	100.00	

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	690	284	974	89.63	10.87
February	690	290	980	90.23	9.77
March	700	298	998	91.89	8.11
April	718	304	1,022	94.10	5.90
May	732	334	1,066	98.15	1.85
June	748	338	1,086		
July	750	306	1,056	97.42	2.58
August	756	312	1,068	98.34	1.66
September	764	298	1,062	96.86	3.14
October	746	316	1,062	97.79	2.21
November	728	306	1,034	96.21	4.79
December	720	324	1,044	96.13	3.87
Averages	728	309	10.37	95.49	4.51

Days in operation, 297.

Hours of labor—summer, 10.8; winter, 9.8.

Number of accidents, 14.

Total wages paid, \$361,708.

Total salaries paid, \$40,764.

BLACKSMITHING.
(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent- ages.
\$25.00 per week and over.....	6				6	.87
20.00 but under \$25.00.....	8				8	1.17
18.00 but under 20.00.....	8				8	1.17
15.00 but under 18.00.....	8				8	6.71
13.00 but under 15.00.....	12				12	1.75
12.00 but under 13.00.....	46				46	6.71
11.00 but under 12.00.....	64				64	9.32
10.00 but under 11.00.....	68				68	9.90
9.00 but under 10.00.....	128				128	13.62
8.00 but under 9.00.....	106				106	15.45
7.00 but under 8.00.....	60				60	8.72
6.00 but under 7.00.....	72				72	10.45
5.50 but under 6.00.....	20	4			24	3.45
5.00 but under 5.50.....	32		6		38	5.54
4.50 but under 5.00.....	8				8	1.17
4.00 but under 4.50.....	4				4	.62
3.50 but under 4.00.....	10				10	1.45
3.00 but under 3.50.....	2	4	2		8	1.17
2.50 but under 3.00.....		4			4	.62
2.00 but under 2.50.....		2	4		6	.87
1.50 but under 2.00.....			6		6	.87
Under \$1.50						
Totals	654	14	18		686	100.00
Percentages	95.34	2.04	2.62		100.00	

HOOR, DAY AND PIECE HANDS.

No. employed by the hour.....	44		2		46	6.72
No. employed by the day.....	582	10	16		608	88.62
No. employed on piece wk.....	28	4			32	4.66
Totals	654	14	18		686	100.00
Percentages	95.34	2.04	2.62		100.00	

PERSONS EMPLOYED. RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	592	6	598	94.92	5.08
February	600	6	606	96.19	3.81
March	612	6	618	98.09	1.91
April	616	14	630		
May	616	14	630		
June	604	6	610	96.32	3.12
July	614	6	620	98.41	1.59
August	600	6	606	96.19	3.81
September	594	6	600	95.23	4.77
October	608	6	614	97.46	2.54
November	610	6	616	97.77	2.23
December	608	6	614	97.46	2.54
Averages	606.17	7.33	613.50	97.30	2.70

Days in operation, 282.
Hours of labor—summer, 10; winter, 9.4.
Number of accidents, 10.
Total wages paid, \$279,314.
Total salaries paid, \$400.

BRICK AND STONE MASONS.

(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent- ages.
\$25.00 per week and over..	8				8	.50
20.00 but under \$25.00.....	72				72	4.55
18.00 but under 20.00.....	246				246	15.57
15.00 but under 18.00.....	206				206	13.04
13.00 but under 15.00.....	102				102	6.46
12.00 but under 13.00.....	70				70	4.43
11.00 but under 12.00.....	52				52	3.29
10.00 but under 11.00.....	74				74	4.69
9.00 but under 10.00.....	362				362	22.91
8.00 but under 9.00.....	228				228	14.43
7.00 but under 8.00.....	112		4		116	7.35
6.00 but under 7.00.....	40				40	2.54
5.50 but under 6.00.....						
5.00 but under 5.50.....			2		2	.12
4.50 but under 5.00.....						
4.00 but under 4.50.....						
3.50 but under 4.00.....						
3.00 but under 3.50.....			2		2	.12
2.50 but under 3.00.....						
2.00 but under 2.50.....						
1.50 but under 2.00.....						
Under \$1.50						
Totals	1,572		8		1,580	100.00
Percentages	99.50		.50		100.00	

HOUR, DAY AND PIECE HANDS.

No. employed by the hour.	858		2		860	54.43
No. employed by the day..	700		6		706	44.69
No. employed on piece wk.	14				14	.88
Totals	1,572		8		1,580	100.00
Percentages	99.50		.50		100.00	

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	314		314	24.22	75.78
February	332		332	25.61	74.39
March	554		554	42.74	57.26
April	998		998	77.00	23.00
May	1,150		1,150	88.73	11.27
June	1,296		1,296		
July	1,112		1,112	85.80	14.20
August	1,068		1,068	82.40	17.60
September	1,062		1,062	81.94	18.06
October	1,106		1,106	85.33	14.67
November	896		896	69.13	30.87
December	696		696	53.70	46.30
Averages	798.66		798.66	61.56	38.44

Days in operation, 171.

Hours of labor—summer, 9.7; winter, 8.4.

Number of accidents, 12.

Total wages paid, \$435,616.

Total salaries paid, \$5,000.

CARPENTERS AND BUILDING.

(classified weekly earnings.)

Classification.	Males over 15 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent ages.
\$25.00 per week and over..	3				3	.06
20.00 but under \$25.00.....	15				15	.27
18.00 but under 20.00.....	111				111	1.98
15.00 but under 18.00.....	297				297	5.16
13.00 but under 15.00.....	243				243	4.21
12.00 but under 13.00.....	1,260				1,260	21.87
11.00 but under 12.00.....	396				396	6.88
10.00 but under 11.00.....	936				936	16.26
9.00 but under 10.00.....	1,545				1,545	26.81
8.00 but under 9.00.....	294				294	5.10
7.00 but under 8.00.....	318	9	6		333	5.77
6.00 but under 7.00.....	171	6	3	9	189	3.27
5.50 but under 6.00.....	42		12		54	.93
5.00 but under 5.50.....	30				30	.52
4.50 but under 5.00.....	18		15		33	.57
4.00 but under 4.50.....		3			3	.05
3.50 but under 4.00.....	2				2	.05
3.00 but under 3.50.....	6	3	9		18	.31
2.50 but under 3.00.....						
2.00 but under 2.50.....						
1.50 but under 2.00.....						
Under \$1.50.....						
Totals	5,638	21	45	9	5,763	100.00
Percentages	98.69	.37	.78	.16	100.00	

HOUR, DAY AND PIECE HANDS.

No. employed by the hour..	2,422	7	15		2,444	42.40
No. employed by the day..	3,119	14	30	9	3,172	55.64
No. employed on piece wk..	147				147	2.56
Totals	5,688	21	45	9	5,763	100.00
Percentages	98.69	.37	.78	.16	100.00	

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	1,521	3	1,524	31.72	68.28
February	1,647	3	1,650	34.34	65.66
March	2,208	3	2,211	46.02	53.98
April	3,186	12	3,198	66.56	33.44
May	3,300	9	3,309	70.75	29.25
June	4,716	9	4,725	93.55	1.65
July	4,774	30	4,804		
August	4,493	30	4,523	94.15	5.85
September	4,287	6	4,293	89.36	10.64
October	4,194	9	4,203	87.48	12.52
November	3,213	3	3,216	66.91	33.09
December	2,379	3	2,382	49.53	50.42
Averages	3,334	10	3,344	69.60	30.40

Days in operation, 186.

Hours of labor—summer, 9.8; winter, 8.5.

Number of accidents, 60.

Total wages paid, \$1,306,952.

Total salaries paid, \$16,050.

CARRIAGE AND WAGON MAKING.

(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent- ages.
25.00 per week and over.....	.....	.....	.....	.....	.....	.....
20.00 but under 25.00.....	4	.....	.....	.....	4	.94
18.00 but under 20.00.....	6	.....	.....	.....	6	1.41
15.00 but under 18.00.....	10	.....	.....	.....	10	2.35
13.00 but under 15.00.....	68	.....	.....	.....	68	15.97
12.00 but under 13.00.....	28	.....	.....	.....	28	6.58
11.00 but under 12.00.....	46	.....	.....	.....	46	10.79
10.00 but under 11.00.....	114	.....	.....	.....	114	26.77
9.00 but under 10.00.....	30	.....	.....	.....	30	7.04
8.00 but under 9.00.....	52	.....	.....	.....	52	12.21
7.00 but under 8.00.....	20	.....	.....	.....	20	4.69
6.00 but under 7.00.....	8	.....	.....	.....	8	1.87
5.50 but under 6.00.....	6	.....	.....	.....	6	1.41
5.00 but under 5.50.....	8	.....	.....	.....	8	1.87
4.50 but under 5.00.....	.....	.....	4	.....	4	.94
4.00 but under 4.50.....	2	.....	6	.....	8	1.87
3.50 but under 4.00.....	8	.....	4	.....	12	2.82
3.00 but under 3.50.....	.....	.....	2	.....	2	.47
2.50 but under 3.00.....	.....	.....	.....	.....	.....	.....
2.00 but under 2.50.....	.....	.....	.....	.....	.....	.....
1.50 but under 2.00.....	.....	.....	.....	.....	.....	.....
Under \$1.50.....	.....	.....	.....	.....	.....	.....
Totals	410	.....	16	.....	426	100.00
Percentages	96.24	.....	3.76	.....	100.00	.....

HOUR, DAY AND PIECE HANDS.

No. employed by the hour.....	10	.....	.....	10	2.35
No. employed by the day.....	376	.....	16	392	92.01
No. employed on piece wk.....	24	.....	.....	24	5.64
Totals	410	.....	16	426	100.00
Percentages	96.24	.....	3.76	100.00	.....

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	376	.....	376	94.	6.
February	374	.....	374	93.5	6.5
March	380	.....	380	95.	5.
April	386	.....	386	96.5	3.5
May	400	.....	400	.....	.....
June	396	.....	396	99.	1.
July	396	.....	396	99.	1.
August	364	.....	364	91.	9.
September	356	.....	356	89.	11.
October	353	.....	353	89.5	10.5
November	354	.....	354	88.5	11.5
December	354	.....	354	88.5	11.5
Averages	374.5	.....	374.5	93.5	6.5

Days in operation, 232.

Hours of labor—summer, 10; winter, 9.2.

Number of accidents, 2.

Total wages paid, \$12,552.

Total salaries paid, \$5,643.

MACHINISTS.

(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent ages.
\$25.00 per week and over..	6				6	1.03
20.00 but under \$25.00.....	3				3	.51
18.00 but under 20.00.....	9				9	1.56
15.00 but under 18.00.....	93				93	16.07
13.00 but under 15.00.....	42				42	7.25
12.00 but under 13.00.....	48				48	8.29
11.00 but under 12.00.....	18				18	3.11
10.00 but under 11.00.....	66				66	11.39
9.00 but under 10.00.....	99				99	17.09
8.00 but under 9.00.....	30				30	5.19
7.00 but under 8.00.....	66				66	11.39
6.00 but under 7.00.....	24	6			30	5.19
5.50 but under 6.00.....						
5.00 but under 5.50.....	24				24	4.15
4.50 but under 5.00.....	6				6	1.04
4.00 but under 4.50.....	3		3		6	1.04
3.50 but under 4.00.....						
3.00 but under 3.50.....	3	9	9		21	3.64
2.50 but under 3.00.....			6		6	1.03
2.00 but under 2.50.....		3			3	.51
1.50 but under 2.00.....				3	3	.51
Under \$1.50						
Totals	540	18	18	3	579	100.00
Percentages	93.27	3.11	3.11	.51	100.00	

HOUR, DAY AND PIECE HANDS.

No. employed by the hour..	135		11		146	25.22
No. employed by the day..	402	18	7	3	430	74.27
No. employed on piece wk..	3				3	.51
Totals	540	18	18	3	579	100.00
Percentages	93.27	3.11	3.11	.51	100.00	

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	408	12	420	76.92	23.08
February	423	12	435	79.67	20.32
March	460	12	462	84.61	15.39
April	417	21	438	80.21	19.79
May	435	21	456	83.51	16.49
June	441	21	462	84.61	15.39
July	444	12	456	83.51	16.49
August	471	12	483	88.46	11.54
September	492	12	504	92.30	7.70
October	483	12	495	90.65	9.35
November	474	12	486	89.01	10.99
December	534	12	546		
Averages	456	14.25	470.25	86.08	13.92

Days in operation, 264.

Hours of labor—summer, 10; winter, 9.6.

Number of accidents, 9.

Total wages paid, \$221,865.

Total salaries paid, \$25,909.

MARBLE AND STONE CUTTING.

(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent. ages.
\$25.00 per week and over..	8				8	1.84
20.00 but under \$25.00.....	4				4	.92
18.00 but under 20.00.....	24				24	5.52
15.00 but under 18.00.....	22				22	5.06
13.00 but under 15.00.....	30				30	6.91
12.00 but under 13.00.....	78				78	17.97
11.00 but under 12.00.....	36				36	8.29
10.00 but under 11.00.....	48				48	11.06
9.00 but under 10.00.....	58				58	13.36
8.00 but under 9.00.....	20				20	4.60
7.00 but under 8.00.....	64				64	14.74
6.00 but under 7.00.....	18		4		22	5.07
5.50 but under 6.00.....	6				6	1.39
5.00 but under 5.50.....	2				2	.47
4.50 but under 5.00.....	2				2	.47
4.00 but under 4.50.....	2				2	.47
3.50 but under 4.00.....	2		2		4	.93
3.00 but under 3.50.....			2		2	.47
2.50 but under 3.00.....			2		2	.47
2.00 but under 2.50.....						
1.50 but under 2.00.....						
Under \$1.50.....						
Totals	424		10		434	100.00
Percentages	97.70		2.30		100.00	

HOUR, DAY AND PIECE HANDS.

No. employed by the hour..	106		2		108	24.89
No. employed by the day..	314		8		322	74.19
No. employed on piece wk.	4				4	.92
Totals	424		10		434	100.00
Percentages	97.70		2.30		100.00	

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	192		192	41.92	58.08
February	298		298	62.88	37.12
March	266		266	79.91	20.09
April	438		438	95.63	4.37
May	458		458		
June	458		458		
July	428		428	93.44	6.56
August	458		458		
September	402		402	87.77	12.23
October	392		392	85.58	14.42
November	334		334	72.92	27.08
December	278		278	60.91	39.09
Averages	375.16		375.16	81.87	18.13

Days in operation, 263.

Hours of labor—summer, 9.9; winter, 8.3.

Number of accidents, —.

Total wages paid, \$179,170.

Total salaries paid, \$38,918.

MERCHANT TAILORING.

(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent- ages.
\$25.00 per week and over...	12				12	.95
20.00 but under \$25.00.....	20				20	1.59
18.00 but under 20.00.....	16				16	1.27
15.00 but under 18.00.....	62				62	4.98
13.00 but under 15.00.....	68				68	5.42
12.00 but under 13.00.....	72				72	5.74
11.00 but under 12.00.....	118	4			122	9.72
10.00 but under 11.00.....	142	2			144	11.47
9.00 but under 10.00.....	168	8			176	14.01
8.00 but under 9.00.....	114	2			116	9.24
7.00 but under 8.00.....	74	36			110	8.76
6.00 but under 7.00.....	82	38			120	9.56
5.60 but under 6.00.....	8	24	2	2	36	2.87
5.00 but under 5.50.....	8	24			32	2.54
4.50 but under 5.00.....	2	46	4	6	58	4.63
4.00 but under 4.50.....	8	10	4		22	1.76
3.50 but under 4.00.....		12	2		14	1.11
3.00 but under 3.50.....	8	2	18		28	2.22
2.50 but under 3.00.....	2	4	8	4	18	1.44
2.00 but under 2.50.....			2		2	.15
1.50 but under 2.00.....			2	4	6	.48
Under \$1.50.....			2		2	.15
Totals	984	212	44	16	1,256	100.00
Percentages	78.34	16.87	3.52	1.27	100.00	

HOOR, DAY AND PIECE HANDS.

No. employed by the hour.....	10	4	2	2	18	1.44
No. employed by the day.....	190	78	30	4	302	24.04
No. employed on piece wk.....	784	130	12	10	936	74.52
Totals	984	212	44	16	1,256	100.00
Percentages	78.34	16.87	3.52	1.27	100.00	

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	990	212	1,202	94.05	5.95
February	920	210	1,130	88.41	11.59
March	980	224	1,204	94.20	5.80
April	1,008	228	1,236	96.70	3.30
May	1,042	226	1,268	99.21	.79
June	1,056	222	1,278		
July	918	222	1,140	89.20	10.80
August	876	208	1,084	84.82	15.18
September	953	228	1,186	92.80	7.20
October	1,002	226	1,228	96.08	3.92
November	1,002	222	1,224	95.77	4.23
December	976	220	1,196	93.63	6.43
Averages	977.34	220.66	1,198	93.74	6.26

Days in operation, 281.
Hours of labor—summer, 10; winter, 9.5.
Number of accidents, 2.
Total wages paid, \$543,128.
Total salaries paid, \$39,490.

GENERAL CONTRACTING.

(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent ages.
\$25.00 per week and over..	36				36	1.75
20.00 but under \$25.00.....	30				30	1.46
18.00 but under 20.00.....	129				129	6.29
15.00 but under 18.00.....	93				93	4.54
13.00 but under 15.00.....	189				189	9.22
12.00 but under 13.00.....	128				128	6.15
11.00 but under 12.00.....	30				30	1.46
10.00 but under 11.00.....	360				360	17.54
9.00 but under 10.00.....	717				717	34.95
8.00 but under 9.00.....	273				273	13.30
7.00 but under 8.00.....	48				48	2.33
6.00 but under 7.00.....	15				15	.72
5.50 but under 6.00.....						
5.00 but under 5.50.....						
4.50 but under 5.00.....	6				6	.29
4.00 but under 4.50.....						
3.50 but under 4.00.....						
3.00 but under 3.50.....						
2.50 but under 3.00.....						
2.00 but under 2.50.....						
1.50 but under 2.00.....						
Under \$1.50						
Totals	2,052				2,052	100.00
Percentages	100.00				100.00	

HOUR, DAY AND PIECE HANDS.

No. employed by the hour..	321				321	15.67
No. employed by the day..	1,731				1,731	84.33
No. employed on piece wk.						
Totals	2,052				2,052	100.00
Percentages	100.00				100.00	

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	222		222	12.09	87.91
February	234		234	12.75	87.25
March	213		213	11.07	88.93
April	951		951	51.82	48.18
May	1,023		1,023	55.74	44.26
June	1,065		1,065	58.03	41.97
July	1,314		1,314	71.60	28.40
August	1,206		1,206	65.72	34.28
September	1,287		1,287	70.13	29.87
October	1,835		1,835		
November	1,284		1,284	69.97	30.03
December	759		759	41.38	58.62
Averages	949.41		949.41	51.71	48.29

Days in operation, 201.

Hours of labor—summer, 10; winter, 8.9.

Number of accidents, 38.

Total wages paid, \$456,426.

Total salaries paid, \$44,175.

PAINTING.

(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years	Males under 18 years.	Females under 18 years.	Totals.	Per cent- ages.
\$25.00 per week and over..						
20.00 but under \$25.00.....						
18.00 but under 20.00.....	8				8	2.50
15.00 but under 18.00.....	36				36	2.29
13.00 but under 15.00.....	160				160	10.19
12.00 but under 13.00.....	416				416	26.47
11.00 but under 12.00.....	168				168	10.69
10.00 but under 11.00.....	183	4			192	12.22
9.00 but under 10.00.....	256				256	16.29
8.00 but under 9.00.....	104				104	6.62
7.00 but under 8.00.....	80				80	5.09
6.00 but under 7.00.....	48		12	4	64	4.08
5.50 but under 6.00.....	12		4		16	1.02
5.00 but under 5.50.....	12		8		20	1.27
4.50 but under 5.00.....	4				4	.25
4.00 but under 4.50.....					4	.25
3.50 but under 4.00.....			4		4	.25
3.00 but under 3.50.....	8		4		12	.76
2.50 but under 3.00.....		4	4		8	.50
2.00 but under 2.50.....		4	4		8	.50
1.50 but under 2.00.....			12		12	.76
Under \$1.50						
Totals	1,500	12	56	4	1,572	100.00
Percentages	95.43	.76	3.56	.25	100.00	

HOUR, DAY AND PIECE HANDS.

No. employed by the hour..	648	12	32	4	696	44.23
No. employed by the day..	844		20		864	54.96
No. employed on piece wk.	8		4		12	.76
Totals	1,500	12	56	4	1,572	100.00
Percentages	95.43	.76	3.56	.25	100.00	

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	452	4	456	29.30	70.70
February	520	4	524	33.67	66.33
March	1,172	4	1,176	75.57	24.43
April	1,280	4	1,284	82.51	17.49
May	1,540	16	1,556		
June	1,488	16	1,504	96.65	3.35
July	1,240	16	1,256	80.71	19.29
August	1,176	4	1,180	75.83	24.17
September	1,188	4	1,192	76.60	23.40
October	1,156	4	1,160	74.65	25.35
November	888	4	892	57.32	42.68
December	576	4	580	37.27	62.73
Averages	1,056.33	7	1,063.33	68.31	31.69

Days in operation, 196.

Hours of labor—summer, 9.7; winter, 8.3.

Number of accidents, 4.

Total wages paid, \$522,064.

Total salaries paid, \$14,200.

PLUMBING.

(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent- ages.
\$25.00 per week and over.....	2				2	.27
20.00 but under \$25.00.....	36				36	5.02
18.00 but under 20.00.....	52				52	7.26
15.00 but under 18.00.....	56				56	7.82
13.00 but under 15.00.....	46				46	6.42
12.00 but under 13.00.....	48				48	6.70
11.00 but under 12.00.....	24				24	3.36
10.00 but under 11.00.....	62				62	8.65
9.00 but under 10.00.....	204				204	28.49
8.00 but under 9.00.....	40	2			42	5.86
7.00 but under 8.00.....	38				38	5.31
6.00 but under 7.00.....	36				36	5.03
5.50 but under 6.00.....						
5.00 but under 5.50.....	2	4			6	.85
4.50 but under 5.00.....	8		2		10	1.40
4.00 but under 4.50.....	12		2		14	1.96
3.50 but under 4.00.....	6		10		16	2.24
3.00 but under 3.50.....	8	2	6		16	2.24
2.50 but under 3.00.....			6		6	.85
2.00 but under 2.50.....						
1.50 but under 2.00.....			2		2	.27
Under \$1.50						
Totals	690	8	28		716	100.00
Percentages	94.97	1.11	3.92		100.00	

HOUR, DAY AND PIECE HANDS.

No. employed by the hour.....	192	2	6		200	27.94
No. employed by the day.....	486	6	22		514	71.79
No. employed on piece wk.....	2				2	.27
Totals	690	8	28		716	100.00
Percentages	94.97	1.11	3.92		100.00	

PERSONS EMPLOYED. RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	392	2	394	67.46	32.54
February	366	2	368	63.01	36.99
March	362	2	364	62.32	37.68
April	456	8	464	79.45	20.55
May	466	8	474	81.16	18.84
June	498	8	506	86.64	13.36
July	506	4	510	87.32	12.68
August	546	4	550	94.17	5.83
September	580	4	584		
October	556	4	560	95.89	4.11
November	536	4	540	92.46	7.54
December	468	2	470	80.47	19.53
Averages	477.67	4.33	482	82.53	17.47

Days in operation, 245.

Hours of labor—summer, 9.5; winter, 8.4.

Number of accidents, —

Total wages paid, \$314,800.

Total salaries paid, \$23,178.

PRINTING AND PUBLISHING.

(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent- ages.
\$25.00 per week and over..	31				31	1.64
20.00 but under \$25.00.....	63				63	3.06
18.00 but under 20.00.....	38				38	1.93
15.00 but under 18.00.....	126				126	6.11
13.00 but under 15.00.....	131				131	6.36
12.00 but under 13.00.....	108				108	5.24
11.00 but under 12.00.....	76	15			91	4.41
10.00 but under 11.00.....	106	4			110	5.33
9.00 but under 10.00.....	139	6			145	7.03
8.00 but under 9.00.....	96	23			119	5.77
7.00 but under 8.00.....	113	27	12		152	7.39
6.00 but under 7.00.....	135	32	10	2	179	8.60
5.50 but under 6.00.....	37	22	3	1	63	3.06
5.00 but under 5.50.....	81	38	16	2	137	6.65
4.50 but under 5.00.....	28	19	12	8	67	3.27
4.00 but under 4.50.....	35	24	18	6	83	4.06
3.50 but under 4.00.....	13	23	18	8	62	3.01
3.00 but under 3.50.....	11	44	61	20	136	6.50
2.50 but under 3.00.....		15	44	23	81	3.94
2.00 but under 2.50.....		12	41	14	67	3.23
1.50 but under 2.00.....			28	15	43	2.09
Under \$1.50			22	4	26	1.25
Totals	1,370	304	285	102	2,061	100.00
Percentages	66.47	14.75	13.83	4.96	100.00	.....

HOUR, DAY AND PIECE HANDS.

No. employed by the hour..	163	34	33	2	232	11.36
No. employed by the day..	1,033	200	246	97	1,576	76.47
No. employed on piece wk.	174	70	6	3	253	12.17
Totals	1,370	304	285	102	2,061	100.00
Percentages	66.47	14.75	13.83	4.96	100.00	.....

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	1,539	387	1,976	96.63	3.36
February	1,597	408	2,005	98.04	1.96
March	1,607	396	2,003	97.94	2.06
April	1,635	410	2,045		
May	1,618	400	2,018	98.67	1.33
June	1,626	396	2,022	98.87	1.13
July	1,610	400	2,010	98.23	1.77
August	1,588	391	1,979	96.77	3.23
September	1,600	393	1,993	97.45	2.55
October	1,608	382	1,990	97.31	2.69
November	1,625	383	2,008	98.14	1.86
December	1,639	387	2,026	99.07	.93
Averages	1,611.84	394.41	2,006.25	98.09	1.91

Days in operation, 296.

Hours of labor—summer, 10.3; winter, 9.9.

Number of accidents, 11.

Total wages paid, \$852,013.

Total salaries paid, \$297,430.

TINSMITHS.

(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent- ages.
\$25.00 per week and over.....						
20.00 but under \$25.00.....						
18.00 but under 20.00.....	15				15	5.00
15.00 but under 18.00.....	20				20	6.66
13.00 but under 15.00.....	5				5	1.66
12.00 but under 13.00.....	25				25	8.34
11.00 but under 12.00.....	20				20	6.67
10.00 but under 11.00.....	20				20	6.67
9.00 but under 10.00.....	60				60	19.99
8.00 but under 9.00.....	20				20	6.67
7.00 but under 8.00.....	45				45	15.00
6.00 but under 7.00.....	25		15		40	13.34
5.50 but under 6.00.....	5				5	1.67
5.00 but under 5.50.....						
4.50 but under 5.00.....			5		5	1.67
4.00 but under 4.50.....			10		10	3.33
3.50 but under 4.00.....			10		10	3.33
3.00 but under 3.50.....						
2.50 but under 3.00.....						
2.00 but under 2.50.....						
1.50 but under 2.00.....						
Under \$1.50.....						
Totals.....	260		40		300	100.00
Percentages.....	86.67		13.33		100.00	

HOUR, DAY AND PIECE HANDS.

No. employed by the hour.....	95		20		115	38.33
No. employed by the day.....	165		20		185	61.67
No. employed on piece wk.....						
Totals.....	260		40		300	100.00
Percentages.....	96.67		13.33		100.00	

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January.....	175		175	71.42	28.58
February.....	200		200	81.63	18.37
March.....	210		210	85.71	14.29
April.....	205		205	83.67	16.33
May.....	220		220	89.79	10.21
June.....	215		215	87.75	12.25
July.....	225		225	91.83	8.17
August.....	210		210	85.71	14.29
September.....	200		200	81.63	18.37
October.....	245		245		
November.....	235		235	95.91	4.09
December.....	185		185	75.51	24.49
Averages.....	210.41		210.41	85.71	14.29

Days in operation, 265.

Hours of labor—summer, 10; winter, 8.8.

Number of accidents, —.

Total wages paid, \$96,265.

Total salaries paid, \$36,800.

WELL DRIVERS.

(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent- ages.
\$25.00 per week and over.....						
20.00 but under \$25.00.....						
18.00 but under 20.00.....	18				18	6.18
15.00 but under 18.00.....	12				12	4.13
13.00 but under 15.00.....	18				18	6.18
12.00 but under 13.00.....	21				21	7.22
11.00 but under 12.00.....	15				15	5.16
10.00 but under 11.00.....	3				3	1.03
9.00 but under 10.00.....	66				66	22.68
8.00 but under 9.00.....	15				15	5.16
7.00 but under 8.00.....	48				48	16.49
6.00 but under 7.00.....	36				36	12.38
5.50 but under 6.00.....	6				6	2.06
5.00 but under 5.50.....	18				18	6.18
4.50 but under 5.00.....	9				9	3.09
4.00 but under 4.50.....	3				3	1.03
3.50 but under 4.00.....	3				3	1.03
3.00 but under 3.50.....						
2.50 but under 3.00.....						
2.00 but under 2.50.....						
1.50 but under 2.00.....						
Under \$1.50.....						
Totals	291				291	100.00
Percentages	100.00				100.00	

HOUR, DAY AND PIECE HANDS.

No. employed by the hour.....	9			9	3.09
No. employed by the day.....	282			282	96.91
No. employed on piece wk.....					
Totals	291			291	100.00
Percentages	100.00			100.00	

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January.....	216		216	90.10	9.90
February.....	234		234	85.71	14.29
March.....	234		234	85.71	14.29
April.....	264		264	96.70	3.30
May.....	273		273		
June.....	267		267	97.80	2.20
July.....	243		243	89.01	10.99
August.....	249		249	91.20	8.80
September.....	237		237	86.81	13.19
October.....	246		246	90.10	9.90
November.....	246		246	90.10	9.90
December.....	222		222	81.31	18.69
Averages	247.75		247.75	90.40	9.60

Days in operation, 214.

Hours of labor—summer, 11; winter, 9.1.

Number of accidents, —.

Total wages paid, \$109,425.

Total salaries paid, —.

SUMMARIES, OR TOTALS, OF THE FOURTEEN PRECEDING PRESENTATIONS.

(classified weekly earnings.)

CLASSIFICATION.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	TOTALS.	
					Number.	Per cent.
\$25.00 per week and over..	111				111	59
20.00 but under \$25.00.....	251				251	1.34
18.00 but under 20.00.....	684				684	3.64
15.00 but under 18.00.....	1,053				1,053	5.61
13.00 but under 15.00.....	1,086				1,086	5.68
12.00 but under 13.00.....	2,430				2,430	12.94
11.00 but under 12.00.....	1,099	19			1,118	5.95
10.00 but under 11.00.....	2,197	14			2,211	11.77
9.00 but under 10.00.....	4,044	16			4,060	21.60
8.00 but under 9.00.....	1,444	33			1,477	7.86
7.00 but under 8.00.....	1,182	80	24		1,286	6.85
6.00 but under 7.00.....	754	94	52	15	915	4.87
5.50 but under 6.00.....	162	58	21	3	244	1.30
5.00 but under 5.50.....	267	102	40	2	411	2.19
4.50 but under 5.00.....	123	87	44	14	268	1.43
4.00 but under 4.50.....	91	53	47	6	197	1.05
3.50 but under 4.00.....	45	33	52	8	188	1.00
3.00 but under 3.50.....	72	116	131	22	341	1.82
2.50 but under 3.00.....	2	87	88	26	203	1.08
2.00 but under 2.50.....		47	59	20	126	.68
1.50 but under 2.00.....			60	50	110	.59
Under \$1.50.....			24	6	30	.16
Totals	17,097	869	642	172	18,800	100.00
Percentages	90.34	4.73	3.42	.91	100.00	.....

HOUR, DAY AND PIECE HANDS.

No. employed by the hour..	5,073	77	133	8	5,291	28.14
No. employed by the day..	10,832	604	487	151	12,074	64.22
No. employed by the piece..	1,192	208	22	13	1,435	7.61
Totals	17,097	869	642	172	18,800	100.00
Percentages	90.34	4.73	3.42	.91	100.00	.....

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	8,159	910	9,069	57.07	42.93
February	8,435	935	9,370	58.97	41.03
March	10,048	945	10,993	69.12	30.88
April	12,558	1,001	13,559	85.33	14.67
May	13,863	1,023	14,891	90.57	9.43
June	14,874	1,016	15,890	100.00	.....
July	14,574	998	15,572	98.00	2.00
August	14,061	967	15,028	94.58	5.42
September	13,997	951	14,948	94.07	5.93
October	14,535	959	15,494	97.51	2.49
November	12,425	940	13,365	84.11	15.89
December	10,394	958	11,352	71.44	28.56
Averages	12,285	967	13,252	83.40	16.60

Average days in operation, 245.83.

Average hours of labor—summer, 10; winter, 9.

Number of accidents, 163.

Total wages paid, \$5,861,299.

Total salaries paid, \$637,362.

CLASSIFIED WEEKLY EARNINGS.

Preceding this are fifteen tables. Each of these tables, except the last in order, covers the "Classified Weekly Earnings" and certain conditions of "Employment" of one trade or industry. The last table is a kind of a summary of the other fourteen; that is, it includes the figures for the fourteen trades when combined.

The first part of the preceding tables relates to classified weekly earnings. That is, it shows the number of persons who received specified weekly earnings. Concerning the persons employed, as presented here, the first thing to attract attention is perhaps the fact that the employes have been presented according to sex and age. Thus we find, that the first column in order reading from left to right includes all male employes 18 years of age and over; that the second includes the female employes 18 years and over; that the third column includes the males under 18 years; that the fourth column includes the females under 18 years. This embraces the classifications as to age and sex.

The tables, however, show more than this. In the fifth column in order we find the total number of persons of all ages and both sexes combined, and in the sixth and last we find the per cent. of the total number in each class of the total number employed.

Taking the last table, the one for all industries, we find, besides the other facts, the number and per cent. of persons in each age and sex class. Thus it is seen that of the 18,800 persons employed in the skilled trades included 17,097, or 90.94 per cent., were males 18 years or over; that 889, or 4.73 per cent., were females 18 years or over; that 642, or 3.42 per cent., were males under 18 years; and that 172 persons, or .91 per cent., were females under 18 years.

While all of these classes of employes are represented in the table for all industries, or in the summaries, this is not the case in the table for many of the industries when standing alone. This is readily seen from even a glance at the different tables. Brick and stone contractors, carriage and wagon makers, marble and stone contractors and tinsmiths employed no females;

blacksmiths and plumbers no females under 18 years; general contractors and well drivers no females and no males under 18 years. In all the other trades, persons of all classes were found or reported.

Taking up the "Classified Earnings" we find first that 22 classes of specified earnings are given. These classes begin with \$25.00 per week and over, and are gradually reduced in point of amount until for the last in the table, which show the number who received less than \$1.50 per week. Next we come to the number of persons in each of these classes. In the summaries, or table representing all industries, the males 18 years and over are found in all classes down to \$2.50 but under \$3.00 per week. At a lower earning than this no males of this age were reported. Of females 18 years and over no one was reported as earning more than \$11.00 but under \$12.00, and no one as less than \$2.00 but under \$2.50. In all classes between these two, however, the females of this age are represented. Of the males under 18 years none are found above the class \$7.00 but under \$8.00, but below this they are found in all classes. The females under 18 years are represented in all classes of earnings down, beginning with \$6.00 but under \$7.00. When all persons are included all classes of earnings in the table are represented.

With respect to earnings, or the amount earned per week, the position of the classes of persons included stands as follows: First, males 18 years or over; second, females 18 years or over; third, males under 18 years; fourth, females under 18 years.

To make a more detailed study of the earnings easier the above classes have been reduced in number. The first exhibit in the reduced form is the one next in order, and this shows the number of persons who received classified earnings:

NUMBER OF PERSONS IN FOURTEEN SKILLED TRADES, OR INDUSTRIES, WHO RECEIVED CLASSIFIED WEEKLY EARNINGS.

Classification of weekly earnings.	Number of males.	Number of females.	Total number.
Under \$5.00 per week.....	838	625	1,463
\$5.00 but under \$6.00.....	490	165	655
6.00 but under 7.00.....	806	109	915
7.00 but under 8.00.....	1,206	80	1,286
8.00 but under 9.00.....	1,444	33	1,477
9.00 but under 10.00.....	4,044	16	4,060
10.00 but under 12.00.....	3,296	33	3,329
12.00 but under 15.00.....	3,516		3,516
15.00 but under 20.00.....	1,737		1,737
20.00 and over.....	362		362
Totals	17,739	1,061	18,800
Percentages	94.35	5.65	100.00

The preceding exhibit includes precisely the same number of persons as are found in the total for the fourteen industries. In fact, it differs from the table of earnings as found there only in this, that the classes of specific earnings have been reduced to ten, that the age classes have been omitted altogether, and that the order of the classes has been reversed so that here the exhibit begins with those for the lower earnings and ends with those for the higher. Of the 18,800 persons included 17,739 persons, or 94.35 per cent., were males and 1,061, or 5.65 per cent., were females.

The first class in order is that of "under \$5.00 per week." In this class, 1,463 persons are found, of whom 838 are males and 625 females. The next class in order is \$5.00 but under \$6.00. Here we find 490 males and 165 females, or a total of 655 person. From this on until \$9.00 but under \$10.00 has been included there is a steady increase in the number of males and totals with each class. In the class last named there were 4,044 males, 16 females, or a total of 4,060 persons. Here a decline in the number sets in, the class next in order having only 3,329 persons. Then in the class that follows, or \$10.00 but under \$12.00, the order is reversed and an increase shown, this class containing 3,516, of whom all were males. In the two classes that follow the decrease is marked. The last class in order has only 362 persons. As the table shows, no females earned above \$10.00 but under \$12.00, and in the greatest number they

are found in the very lowest class. As a whole, the exhibit makes the difference in earnings between males and females particularly plain.

What the above exhibit has shown in actual number the next one in order shows in per cent. The per cent. relation of those in each class, as based on the total, expresses, as a rule, more truly the condition than is possible for numbers alone.

PER CENT. OF THE NUMBER OF PERSONS IN EACH CLASS IN THE PRECEDING EXHIBIT, AS BASED UPON THE TOTALS.

Classification of weekly earnings.	Males per cent.	Females per cent.	Total per cent.
Under \$5.00 per week.....	4.73	58.90	7.81
\$5.00 but under 7.00.....	2.77	15.64	3.49
7.00 but under 8.00.....	4.55	10.97	4.87
8.00 but under 9.00.....	6.80	7.54	6.85
9.00 but under 10.00.....	8.15	3.11	7.84
10.00 but under 12.00.....	29.90	1.51	21.60
12.00 but under 15.00.....	19.53	3.11	17.72
15.00 but under 20.00.....	19.83		18.62
20.00 but under 25.00.....	9.80		9.25
25.00 and over.....	2.04		1.33
Total per cent.....	100.00	100.00	100.00

The preceding exhibit shows, as said, the per cent. of persons in each class. Thus we see that in the first class in order, that for "under \$5.00 per week" included 4.73 per cent. of the males and 58.90 per cent. of the females, or 7.81 per cent. of the total persons employed. This class, therefore, has about one-twentieth of the males and three-fifths of the females. This is a pertinent illustration of the relative earnings of the two classes of employees. In the class succeeding this the per cent. is smaller in all cases. In the third in order an increase for the totals sets in and continues until \$9.00 but under \$10.00 is covered, when there is again a decrease, which continues to the end of the exhibit. Together the above two exhibits present as good a description of the earnings of those employed in the skilled trades as any that can be easily devised by figures alone.

The next exhibit, in a still more condensed form, gives, separately, the earnings in each of the fourteen trades and of all, when combined:

COMPARISONS OF EARNINGS IN FOURTEEN TRADES, OR INDUSTRIES,
AND THE AVERAGE FOR ALL.

TRADES OR INDUSTRIES.	PER CENT. OF PERSONS RECEIVING				
	\$9.00 per week and over.	\$7.00 per week and over.	\$6.00 per week and over.	\$5.00 per week and over.	Under \$5.00 per week.
Bakeries	33.76	49.97	52.76	64.01	35.99
Blacksmiths	49.52	73.69	84.18	93.21	6.79
Brick and stone masons	75.44	97.22	99.76	99.88	.12
Carpenters and builders	83.43	94.30	97.57	99.02	.98
Carriage and wagon makers	64.81	84.06	88.75	92.03	7.97
Machinists	66.31	82.89	88.06	92.23	7.77
Marble and granite cutters	70.92	90.26	95.33	97.19	2.81
Merchant tailors	55.10	73.10	82.66	88.07	11.93
General contractors	83.36	98.99	99.71	99.71	.29
Painters	78.65	90.36	94.44	96.73	3.27
Plumbers	73.99	85.16	90.19	91.04	8.96
Printers and publishers	40.99	54.15	62.84	72.55	27.45
Tinsmiths	54.99	76.66	90.00	91.67	8.33
Well drivers	52.58	74.23	86.61	94.85	5.15
Averages above 14 trades, or industries	69.12	83.83	88.70	92.19	7.81

The above exhibit compares the earnings in each trade, by giving the per cent. receiving a specified sum or over in each. This is readily illustrated. Bakers is the first in order in the exhibit. For this trade we find that 33.76 per cent. received \$9.00 per week and over; that 49.97 per cent. received \$7.00 per week or over; that 52.76 per cent. received \$6.00 or over; that 64.01 per cent. received under \$5.00 per week. These are the figures for one trade. For all the other trades as well as for the average for all the trades included similar presentations are made. To find the relative position with respect to earnings of each trade one needs only to compare these figures.

The position of all these industries when combined is found on the last line in the exhibit. Here we find that 69.12 per cent. of the persons employed received \$9.00 per week or over; that 83.83 per cent. received \$7.00 or over; that 88.70 per cent. received 92.19 per cent. and over; and that 7.81 per cent. received less than \$5.00 per week.

On the whole, bakeries, printing establishments and merchant tailors, in the order named, seem from these figures to have been paying the lowest wage. Brick and stone masons, carpenters and builders, marble and stone cutters, general contractors, painters and plumbers, or, in other words, employers in

these lines paid the highest wage. As to which one of these paid the most in earnings it is difficult to determine. The course for all runs fairly even. Employes in these lines are quite well organized. This probably largely accounts for the slightly higher scale. Blacksmiths, carriage makers, machinists, tinsmiths and well drivers occupied, so to say, the middle ground. In the class \$9.00 and over 8 have a greater per cent. of persons than the average and 6 a smaller; in the class \$7.00 and over 7 have a greater per cent. and 7 a smaller; in the class \$6.00 and over 6 have a greater and 8 a smaller; in the class \$5.00 and over 6 have a greater and 8 a smaller; in the class under \$5.00, 8 industries have a greater per cent. than the average and 6 have a smaller.

HOURLY, DAY AND PIECE HANDS.

We have thus considered Classified Earnings, or the first part of the tables. The next step will be to take up the second part of the tables, or that which relates to the respective number of persons who were employed by the Hour, Day, or Piece.

The following exhibit shows for the male persons employed the number employed by the Hour, Day and Piece, respectively:

Classification.	Number.	Per cent.
By the hour.....	5,206	29.35
By the day....	11,319	63.81
By the piece.....	1,214	6.84
Totals	17,739	100.00

Here we find that of the total, or 17,739 male persons employed, 5,206, or 29.35 per cent., were employed by the hour; that 11,319, or 63.81 per cent., were employed by the day; and that 1,214, or 6.84 per cent., were employed by the piece.

In the next exhibit is found the respective proportion of female persons who were employed by the Hour, Day and Piece:

Classification.	Number	Per cent.
By the hour.....	85	8.02
By the day.....	755	71.15
By the piece.....	221	20.83
Totals.....	1,061	100.00

Of the 1,061 female persons employed we find above that 85, or 8.02 per cent., were employed by the hour; that 755, or 71.15 per cent., were employed by the day; and that 221, or 20.83 per cent., were employed by the piece.

Comparing the figures for the males and females, we find some rather peculiar variations. Thus in the case of hour-hands it is seen that 29.35 per cent. of the males and 8.02 per cent. of the females were employed in this way. To locate the reasons for this variation is not easy. In the day-hands the variation is less. In this way 63.81 per cent. of the males as against 71.15 per cent. of the females were employed. In those employed by the piece, however, there is again quite a difference. Of the total males 6.84 per cent. worked by the piece, while of the total females 20.83 per cent. worked at so-called piece work.

The next exhibit is devoted to the total number for both sexes:

Classification.	Number.	Per cent.
By the hour.....	5,291	28.14
By the day.....	12,074	64.22
By the piece.....	1,435	7.64
Totals.....	18,800	100.00

It appears in the preceding exhibit that of the total number for both males and females, or 18,800 persons, 5,291, or 28.14 per cent., were employed by the hour; that 12,074 persons, or 64.22 per cent., were employed by the day; and 1,435, or 7.64 per cent., were employed by the piece.

In looking over the various trades we find that all employers employed persons by the hour and day, though in some cases the

number employed by the hour is very small. Four trades, general contracting, tinsmiths, well drivers and plumbing, employed no one at piece work, and in two other trades, marble and stone cutting and plumbing, those employed at piece work numbered less than 1 per cent. of the whole number in the trade. The females were largely employed in the bakery, tailor and printing trades. In fact, 972 out of the 1,061 females were found in these three trades. That this large proportion of female employes in these trades should affect the conditions therein was inevitable.

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

The last part in each of the fifteen tables covering the fourteen trades, and the summaries of same, which constitute the subject of this part of part VI., show, as already said, the number of males, females, and total persons employed each month, and the "range of employment and unemployment" as based upon the number thus employed. The facts presented in this part of the tables are of the greatest importance. They show not only the actual average number employed each month throughout the year, but calculations as to the monthly course of employment during the period covered.

These facts are so plainly presented in the original tables that in this respect there is little chance for improvement. As a matter of convenience, however, a part of the summaries or table for all the trades is presented again:

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT.

Months.	Total persons employed.	Range of employment.	Range of unemployment.
January	9,069	57.07	42.93
February	9,370	53.97	41.03
March	10,993	69.12	30.88
April	13,559	85.33	14.67
May	14,391	90.57	9.43
June	15,890		
July	15,572	98.00	2.00
August	15,028	94.58	5.42
September	14,948	94.07	5.93
October	15,494	97.51	2.49
November	13,365	84.11	15.89
December	11,352	71.44	28.56
Average to each month	13,253	83.40	16.60

The preceding exhibit deals with the number and range. In January the smallest average number of persons were employed. Following this there is a monthly increase until for June, which month shows the greatest number. July shows a smaller number than June, and the monthly decrease continues to October, when there again is an increase. From this month to the end of the year there is a steady decrease. As a whole, the course during the year is from 9,069 persons in January to 15,890 in June and then down to 11,352 in December, with an average number to each month of 13,253 persons.

In studying the monthly number employed the impression must be conveyed that a large proportion of those who could find employment at some time during the year were unemployed a great part of the time. The time employed is an essential element in all social inquiries. Hence several calculations based upon the course outlined are also presented.

For this purpose the month with the greatest number is regarded as the one when there was full employment or no unemployment. The exhibit shows that, when all trades are combined, the greatest number were found for June, and that in the ranges of employment this month is represented accordingly. As said, the lowest number is that for January. Comparing the number for the lowest and highest month it is found that the former constitutes 57.07 per cent. of the latter. As compared to June, then, 57.07 per cent. were employed and 42.93 per cent. unemployed in January. For February the range was 58.97 and 41.03 per cent., respectively, or a little more narrow than January, which means that more persons were employed and fewer unemployed. The monthly range steadily grows narrower until after June, when as said, all were employed. Beginning with July the range becomes wider, and with only one exception, that for October, when there was a sudden rise in the number employed, grows wider until the end of the year. The impression one must necessarily receive from these facts is, that the employment in these trades, or most of them, is at least very irregular. In four of the months the unemployed ranged from 28.56 to 42.93 per cent. In two others it stood at 14.67 and 15.89 per cent. In connection with the figures of the earnings these facts can not fail to be full of

meaning to those who are studying the condition of wage-earners.

The next exhibit gives the average number of persons employed in each of the fourteen trades considered, and for all when combined. It also shows the range of employment and unemployment when the average number were employed as based upon the number for the month when the greatest number were employed. These figures, as may be seen, are taken from the foot of the table for the industry or trade they represent:

Industries.	Range of unemployment.	Total persons employed.	Range of employment.
Bakeries	1,037	95.49	4.51
Blacksmithing	614	97.30	2.70
Brick and stone masons	799	61.56	38.44
Carpentering and building	3,344	69.60	30.40
Carriage and wagon making	374	93.50	6.50
Machinery	470	86.08	13.92
Marble and stone cutting	375	81.87	18.13
Merchaunt tailoring	1,198	98.74	6.26
General contracting	949	51.71	48.29
Painting	1,063	68.31	31.69
Plumbing	482	82.53	17.47
Printing and publishing	2,006	98.09	1.91
Tinsmiths	210	85.71	14.29
Well driving	248	90.47	9.50
Averages of total for all	13,253	83.40	16.60

This exhibit also shows the irregularity of the employment in many of the trades included. As said above, the range here is based upon the difference between the average number to each month and the number for the month when the greatest number were employed, instead of on the difference between the lowest and highest month, as above. The range in this exhibit, therefore, is necessarily more narrow than in the one preceding it. On the whole, however, this exhibit gives a better idea of the real condition. In the building trades, which are largely made up of brick and stone masons, carpentering and buildings and painting, the range of unemployment, when the average is considered, was over 30 per cent. In four other trades two of which at least are also closely connected with the building trades, the range was from about 14 to about 18 per cent. In the remaining 6 industries the range was comparatively narrow, which means that employment there was fairly regular.

We see from this exhibit that the total number of accidents for all industries was 163. As among the industries, the numbers vary. In Carpentering and Building they number 60. In General Contracting 39. Bakeries had 14, Printing 11, and Masons 14. Four industries show no accidents. Of the number employed when the classified earnings were reported, or 18,800 persons, there was one accident to 115.34 persons. When the average number were employed there is one to 81.3 persons. As already explained the nature of the accidents were not reported.

TOTAL AMOUNT PAID AS WAGES AND SALARIES.

We find in the exhibit which follows the amount paid as wages and salaries in each industry, together with the total amounts for all industries.

AMOUNTS PAID AS WAGES AND SALARIES.

Industries.	Amount paid as wages.	Amount paid as salaries.	Totals.
Bakeries	\$381,708	\$40,764	\$402,472
Blacksmithing	279,314	400	279,714
Brick and stone masons	435,616	5,000	440,616
Carpentering and building	1,306,953	16,050	1,323,003
Carriage and wagon making	182,552	5,648	188,200
Machinists	221,865	26,809	247,674
Marble and stone cutting	179,170	38,918	218,088
Merchant tailoring	543,128	89,490	632,618
General contracting	456,426	44,175	500,601
Painting	522,064	14,200	536,264
Plumbing	314,800	23,178	337,978
Printing and publishing	352,013	297,430	1,149,443
Tinsmithing	96,265	36,800	133,065
Well driving	109,425	.....	109,425
Total for all	\$5,861,299	\$637,862	\$6,499,161

The preceding exhibit shows that, for the establishments included, the amount paid as wages during the year was \$5,861,299, and that paid as salaries \$637,862, a total for both of \$6,499,161. These figures suggest a good many thoughts. What, for instance, is the relation between them and the value of the total product? What was the share to each worker? How was his share paid to them, weekly or monthly? What standard of comfort did it enable them and their families to live in? These are only a few of the lines of thought or investigation

suggested; but even these are not answered. To find out the relation between wages and value of the product would require full data of the latter, and this was not obtained. Some idea of the share to each worker may be had by dividing the total amount of wages by the average number employed. This is not always satisfactory. In fact, it tells us little more than classified earnings, and the range of employment. To get the exact earnings of each worker is practically impossible. Conditions of all kinds block the way. The workers are too numerous for all to be reached, and even if reached they could not be depended upon for correct answers. Where steadily employed, the books of the employer would reveal the facts, but so much labor is involved in tracing the facts down that neither employer or investigator can be expected to cope with it. As to the time of payment, the facts are easily obtained, and while no special efforts were made to obtain them it appeared from these and other returns that the time of payment varied from weekly to monthly. In fact all modes are found. The standard of living is an extremely important question. It involves, however, many separate investigations. Besides the exact earnings of each family, it would be necessary to know how this earning was expended, and the price and grade of the goods it was expended for. This range is plainly too wide for the present effort. Our purpose was mainly to show the classified earnings and range of employment. And these facts, while apparently naked or isolated when the entire field of inquiry is considered, are not without value. They are full of meaning even when they stand alone. When obtained for a series of years they are even more so. From such knowledge as almost everyone possesses of the course of prices on commodities, it is possible to form conclusions as to the effect upon the wage earners of such changes in classified earnings and the range of employment as take place from time to time.

Another matter should be mentioned here. In reporting, many of the smaller establishments were evidently in doubt as what constitutes wages and what salaries. The confusion upon this point evidently caused a few minor errors in the returns. That is, there are possibly a few cases where sums, that

in reality were wages, were classed as salaries and vice versa. From a close examination, however, it is felt that these errors are few, and that such as occurred about balance each other. The total for both wages and salaries is unquestionably correct.

COAL AND WOOD HANDLING, MINING, QUARRYING, AND THE
TOTALS OF THESE, INCLUDING THE TOTALS FOR THE FOUR-
TEEN PRECEDING TRADES.

The four presentations which follow show the classified weekly earnings, the Hour, Day and Piece Hands, the persons employed by months, the average days in operation, the hours of labor, the number of accidents, and the amount paid as wages and salaries, first, for those engaged in coal handling, second, those engaged in mining, third, quarrymen, fourth, the total for these three occupations and the fourteen preceding ones when combined, in 1898.

By coal and wood handling is meant those engaged in the unloading of coal from vessels and who are handling coal and wood on docks and in yards.

By mining is meant mostly those who are employed at mining lead and zinc in the southwestern parts of the state or where these mines are located.

By quarrying is meant those employed in the different stone quarries throughout the state.

The data were in all cases obtained from the employers, and all wage earners employed by them regardless of pay and kind of work done are included. There is, as said, one presentation for each of these industries as well as one in which they and the preceding fourteen are combined. These presentations are precisely the same both in form, arrangement, and nature of the data collected. As those for the fourteen trades or industries were quite fully described in these respects, there is nothing to add on this point here.

COAL AND WOOD HANDLING.
(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent- ages.
\$25.00 per week and over.....	12				12	.56
20.00 but under \$25.00.....	130				130	6.00
18.00 but under 20.00.....	170				170	7.85
15.00 but under 18.00.....	118				118	5.46
13.00 but under 15.00.....	82				82	3.78
12.00 but under 13.00.....	196				196	9.06
11.00 but under 12.00.....	28				28	1.29
10.00 but under 11.00.....	100				100	4.63
9.00 but under 10.00.....	736				736	34.05
8.00 but under 9.00.....	358				358	16.54
7.00 but under 8.00.....	124		4		128	5.91
6.00 but under 7.00.....	50		8		58	2.63
5.50 but under 6.00.....	6				6	.27
5.00 but under 5.50.....	16				16	.74
4.50 but under 5.00.....	8	2	4		14	.64
4.00 but under 4.50.....	4	2			6	.27
3.50 but under 4.00.....						
3.00 but under 3.50.....	4	2			6	.27
2.50 but under 3.00.....						
2.00 but under 2.50.....						
1.50 but under 2.00.....						
Under \$1.50.....						
Totals.....	2,142	6	16		2,164	100.00
Percentages.....	98.99	.27	.74		100.00	

HOUR, DAY AND PIECE HANDS.

No. employed by the hour.....	704		10		714	32.99
No. employed by the day.....	1,363	6	6		1,370	60.99
No. employed on piece wk.....	130				130	6.02
Totals.....	2,142	6	16		2,164	100.00
Percentages.....	98.99	.27	.74		100.00	

**PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOY-
MENT—BY MONTHS.**

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January.....	1,360	6	1,366	66.11	33.89
February.....	1,232	6	1,238	59.92	40.08
March.....	1,170	6	1,176	56.92	43.06
April.....	1,166	6	1,172	56.72	43.28
May.....	1,338	6	1,344	65.05	34.95
June.....	1,436	4	1,440	69.69	30.31
July.....	1,604	4	1,608	77.83	22.17
August.....	1,628	4	1,632	78.99	21.01
September.....	1,664	6	1,660	80.34	19.66
October.....	2,060	6	2,066		
November.....	1,754	22	1,776	85.96	14.04
December.....	1,558	22	1,580	76.47	23.53
Averages.....	1,496.66	8.16	1,504.82	72.84	27.16

Days in operation, 278.

Hours of labor—summer, 10; winter, 9.6.

Number of accidents, 53.

Total wages paid, \$822,272.

Total salaries paid, \$155,102.

MINING.

(classified weekly earnings.

Classification.	Males over 18 years.	Female over 18 years.	Males under 18 years.	Female under 18 years.	Totals.	Per cent- ages.
\$25.00 per week and over.						
20.00 but under \$25.00.	1				1	.07
18.00 but under 20.00.	4				4	.23
15.00 but under 18.00.	5				5	.29
13.00 but under 15.00.	22				22	1.75
12.00 but under 13.00.	9				9	.70
11.00 but under 12.00.	30				30	2.33
10.00 but under 11.00.	146				146	11.37
9.00 but under 10.00.	228				228	17.75
8.00 but under 9.00.	451				451	35.12
7.00 but under 8.00.	355				355	27.64
6.00 but under 7.00.	22		9		31	2.41
5.50 but under 6.00.						
5.00 but under 5.50.						
4.50 but under 5.00.	2				2	.15
4.00 but under 4.50.						
3.50 but under 4.00.						
3.00 but under 3.50.						
2.50 but under 3.00.						
2.00 but under 2.50.						
1.50 but under 2.00.						
Under \$1.50						
Totals	1,275		9		1,284	100.00
Percentages	99.29		.71		100.00	

HOUR, DAY AND PIECE HANDS.

No. employed by the hour.	6			6	.46
No. employed by the day.	1,123		9	1,132	88.17
No. employed on piece wk.	146			146	11.37
Totals	1,275		9	1,284	100.00
Percentages	99.29		.71	100.00	

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	1,232		1,232	95.28	4.72
February	1,235		1,235	95.51	4.49
March	1,293		1,293		
April	1,198		1,198	92.65	7.35
May	1,209		1,209	93.50	6.50
June	1,194		1,194	92.34	7.65
July	1,226		1,226	94.81	5.19
August	1,259		1,259	97.37	2.63
September	1,253		1,253	96.90	3.10
October	1,253		1,253	96.90	3.10
November	1,200		1,200	92.80	7.20
December	1,193		1,193	92.26	7.74
Averages	1,229		1,229	95.055	4.95

Days in operation, 283.
 Hours of labor—summer, 9.2; winter, 9.
 Number of accidents, 2.
 Total wages paid, \$520,065.
 Total salaries paid, \$43,661.

QUARRYMEN.
(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent- ages.
\$25.00 per week and over.						
20.00 but under 25.00.	4				4	.34
18.00 but under 20.00.	58				58	4.97
15.00 but under 18.00.	108				108	9.95
12.00 but under 15.00.	12				12	1.03
11.00 but under 12.00.	8				8	.69
10.00 but under 11.00.	88				88	7.54
9.00 but under 10.00.	298				298	24.53
8.00 but under 9.00.	194				194	16.61
7.00 but under 8.00.	252				252	21.57
6.00 but under 7.00.	116	2			118	10.10
5.50 but under 6.00.	16				16	1.37
5.00 but under 5.50.	60				60	5.13
4.50 but under 5.00.	2				2	.17
4.00 but under 4.50.	2				2	.17
3.50 but under 4.00.						
3.00 but under 3.50.		2	6		8	.68
2.50 but under 3.00.		6			6	.51
2.00 but under 2.50.			4		4	.34
1.50 but under 2.00.						
Under \$1.50.						
Totals	1,148	10	10		1,168	100.00
Percentages	98.28	.86	.86		100.00	

HOOR, DAY AND PIECE HANDS.

No. employed by the hour.	501	10	4		515	44.00
No. employed by the day.	604		6		610	52.23
No. employed on piece wk.	43				43	3.68
Totals	1,148	10	10		1,168	100.00
Percentages	98.28	.86	.86		100.00	

**PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOY-
MENT—BY MONTHS.**

Months.	Males.	Females.	Totals.	Range of employ- ment.	Range of unem- ployment.
January	472	6	478	49.07	50.93
February	480	6	486	49.89	50.11
March	528	6	534	53.79	46.21
April	782	6	788	80.90	19.10
May	754	10	764	78.43	21.57
June	964	10	974		
July	904	10	914	93.82	6.18
August	870	10	880	90.34	9.66
September	900	6	906	93.01	6.99
October	894	6	900	92.40	7.60
November	788	6	794	81.50	18.50
December	572	6	578	58.31	41.69
Averages	741.66	7.34	749	77.00	23.00

Days in operation, 175.

Hours of labor—summer, 9.9; winter, 8.6.

Number of accidents, 10.

Total wages paid, \$259,256.

Total salaries paid, \$24,698.

TOTALS FOR FOURTEEN SKILLED TRADES, COAL AND WOOD HANDLING, MINING, QUARRYMEN.

(classified weekly earnings.)

Classification.	Males over 18 years.	Females over 18 years.	Males under 18 years.	Females under 18 years.	Totals.	Per cent-ages.
\$25.00 per week and over..	193				193	.59
20.00 hut under \$25.00.....	399				399	1.63
15.00 hut under 20.00.....	862				862	3.63
15.00 hut under 15.00.....	1,234				1,234	5.28
12.00 hut under 15.00.....	1,999				1,999	8.54
12.00 hut under 12.00.....	2,647				2,647	11.31
11.00 hut under 12.00.....	1,165	19			1,184	5.05
10.00 hut under 11.00.....	2,531	14			2,545	10.87
9.00 hut under 10.00.....	5,296	16			5,312	22.49
8.00 hut under 9.00.....	2,447	23			2,470	10.53
7.00 hut under 8.00.....	1,913	80	29		2,022	8.67
6.00 hut under 7.00.....	492	98	60	15	1,199	4.79
5.50 hut under 6.00.....	104	53	21	3	208	1.12
5.00 hut under 5.50.....	343	104	46	2	495	9.08
4.50 hut under 5.00.....	125	29	49	14	206	1.29
4.00 hut under 4.50.....	97	53	47	6	203	.87
3.50 hut under 4.00.....	45	25	59	2	199	.80
3.00 hut under 3.50.....	78	119	127	29	353	1.51
2.50 hut under 3.00.....	2	93	98	26	209	.89
2.00 hut under 2.50.....		47	63	20	130	.55
1.50 hut under 2.00.....			60	50	110	.47
Under \$1.50.....			24	6	30	.13
Totals	21,662	905	677	172	23,416	100.00
Percentages	92.51	3.87	2.89	.73	100.00	.....

HOUR, DAY AND PIECE HANDS.

No. employed by the hour..	6,284	87	137	18	6,526	27.87
No. employed by the day..	13,867	610	518	141	15,136	64.64
No. employed on piece wk..	1,511	208	22	13	1,754	7.49
Totals	21,662	905	677	172	23,416	100.00
Percentages	92.51	3.87	2.89	.73	100.00	.....

PERSONS EMPLOYED, RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY MONTHS.

Months.	Males.	Females.	Totals.	Range of employment.	Range of unemployment.
January	11,223	922	12,145	61.60	38.40
February	11,332	947	12,329	62.64	37.46
March	13,039	967	13,996	70.99	29.01
April	15,704	1,013	16,717	84.80	15.20
May	16,664	1,044	17,708	89.32	10.18
June	18,468	1,080	19,498	98.90	1.10
July	18,308	1,013	19,320	98.00	2.00
August	17,818	981	18,799	96.36	4.64
September	17,804	963	18,767	95.20	4.80
October	18,742	971	19,713	.....	.....
November	16,167	968	17,135	86.82	13.08
December	13,717	986	14,703	74.68	25.42
Averages	15,764	932	16,736	84.89	15.11

Days in operation, 245.82.
Hours of labor—summer, 10; winter, 9.
Number of accidents, 233.
Total wages paid, \$7,462,892.
Total salaries paid, \$861,323.

In each of the four preceding tables the first part relates to "Classified Weekly Earnings." In that part the table for "Coal, handling" includes 2,164 persons of whom 98.98 per cent. were males 18 years and over, .27 per cent. females 18 years and over, .73 per cent. males under 18 years. The table for "Mining" includes 1,284 persons of whom 99.29 per cent. were males 18 years and over and .71 per cent. males under 18 years. The table for "Quarrymen" includes 1,168 persons of whom 98.28 per cent. were males 18 years and over, .86 per cent. were females 18 years and over, and .86 per cent. males under 18 years. The last table, the one for seventeen occupations or industries, includes 23,416 persons of whom 92.51 per cent. were males 18 and over, 3.87 per cent. females 18 years and over, 2.89 per cent. males under 18, and .73 per cent. females under 18 years.

The same number of persons as given above are also found in the corresponding parts for "Hour, Day, and Piece Hands." The average number to each month, as based upon the monthly average, is a great deal lower than this. Thus we find that "Coal handlers" shows only 1,505 as the average; Mining shows an average of 1,229 persons; "Quarrymen" shows an average of 750 persons, and the table for all industries shows an average of 16,736 persons.

As to the "Classified Earnings," that for Coal handlers ranks as high as for most of the skilled trades. The earnings of the Miners is much lower than for Coal handlers. In fact, it seems to be on the par with that for common labor in general. For Quarrymen the earnings is about the same as for Miners, the labor involved being of much the same character. The average earnings for all seems to be about midway between that for Quarrying and that for Coal handlers.

Of the Coal handlers, 32.99 per cent. were employed by the hour, 60.99 per cent. by the day, and 6.02 per cent. were employed by the piece.

Of the Miners, 46 per cent. only were employed by the hour, while 88.17 per cent. were employed by the day, and 11.37 per cent. by the piece.

Of the Quarry hands, 44.09 per cent. were employed by the hour, 52.23 per cent. by the day, and 3.68 per cent. were employed at piece work.

The average "Range of Unemployment" was: Coal handlers, 27.16 per cent., Mining, 4.95 per cent., Quarrymen, 23 per cent., all, or 17 industries, 15.11 per cent. According to this the irregularity was greatest for the Coal handlers and smallest for the Miners.

For all industries,—seventeen,—the average days in operation was 245.82, the hours of daily labor, 10 in summer and 9 in winter, the number of accidents, 233, the total amount paid as wages, \$7,462,892, and the total salaries, \$861,323. These facts for the other three tables are found at the foot of same.

In order that the earnings in these occupations or tables may be the more readily compared with that in other occupations as shown, the facts relating to it for each has been reduced to the classes as given in the following exhibit:

COMPARISON OF EARNINGS IN COAL HANDLING, MINING, QUARRYING, AND OF THE AVERAGE FOR 17 INDUSTRIES, INCLUDING THE THREE PRESENTED HERE AND THE FOURTEEN PRESENTED IN THE PRECEDING PAGES.

INDUSTRIES.	PER CENT. OF PERSONS RECEIVING				
	\$9.00 per week and over.	\$7.00 per week and over.	\$6.00 per week and over.	\$5.00 per week and over.	Under \$5.00 per week.
Coal and wood handling.....	72.63	95.13	97.81	98.82	1.18
Mining.....	34.68	97.44	99.85	99.85	.15
Quarrying.....	43.35	81.53	91.63	98.13	1.87
Average of above three and preceding fourteen industries.....	66.30	85.56	90.35	93.56	6.44

From the above exhibit it is seen that of the Coal handlers 72.68 per cent. received \$9.00 per week and over, 95.13 per cent. received \$7.00 and over, 97.81 per cent. received \$6.00 per week or over, 98.82 per cent. received \$5.00 and over, while 1.18 per cent. received less than \$5.00 per week. For Mining and Quarrying the earnings were somewhat lower. Thus it is seen that for the former of these only 34.68 per cent. and for the latter 43.35 per cent. received \$9.00 per week and over.

When the seventeen industries are included, 66.30 per cent. were in the \$9.00 and over class, 85.56 per cent. in the \$7.00 and over class, 90.35 per cent. in the \$6.00 and over class, 93.56 per cent. in the \$5.00 and over class, while 6.44 per cent. were in the "Under \$5.00" class.

LOGGING AND DRIVING—SEASON OF 1897-98.

The total number of persons employed in the timber woods during the season of 1897-98, as shown by the several tabulations which follow, was 12,780.

Of this number 10,560 were variously employed at monthly wages, ranging from \$24.00 to \$105.00, the average being \$35.88, and 2,220 were employed at log driving and received daily wages, ranging from \$1.40 to \$3.40, the average being \$2.38.

The wages paid for one month, exclusive of the persons engaged by the day, is shown to be \$378,890.00. Estimating that the day men, in the occupation of log driving, work 30 days in a month, the total wages of this class would be \$158,550.00, and would make the total \$537,440.00 for one month. In all cases the employes received their board in addition to the wages paid, and if the value of this item is estimated at \$12.00 per month the amount of monthly wages is increased by 153,260 or \$690,800.00.

The uncertainty as to the continuity of employment of the day men makes it necessary to exhibit the data in tables separate from those employed by the month.

Table I is in 13 parts, and shows in detail the number of persons employed in each of the various occupations involved in this industry.

The wages paid are grouped for convenience and shown in descending grade, for each branch of employment, and the number of persons receiving each sum is set opposite thereto.

Appended to each division of this table, there appears for each classification the whole number of persons employed therein, their total wages for one month, and the average wages for one month:

TABLE I.

FOREMEN.

The number of persons employed as foremen in the timber woods during the season of 1897-98, at specified monthly wages, including board.

Classification of daily wages.	Number persons.	Per cent.
\$105.00 per month, including board.....	4	3.5
100.00 per month, including board.....	1	0.9
87.00 per month, including board.....	4	3.5
85.00 per month, including board.....	8	7.1
80.00 per month, including board.....	6	5.4
75.00 per month, including board.....	10	9.0
72.00 per month, including board.....	7	6.2
70.00 per month, including board.....	14	12.5
68.50 per month, including board.....	1	0.9
65.00 per month, including board.....	10	9.0
62.00 per month, including board.....	1	0.9
60.00 per month, including board.....	13	11.6
55.00 per month, including board.....	19	16.9
54.00 per month, including board.....	5	4.5
52.00 per month, including board.....	7	6.2
50.00 per month, including board.....	1	0.9
40.00 per month, including board.....	1	1.
Totals	112	100.

Total wages for one month, \$7,591.50.

Average wages for one month, \$67.78.

SAWIERS.

The number of persons employed as sawyers in the timber woods during the season of 1897-98, at specified monthly wages, including board.

Classification of monthly wages.	Number persons.	Per cent.
\$45.00 per month, including board.....	27	1.
42.00 per month, including board.....	81	3.1
40.00 per month, including board.....	115	4.5
39.00 per month, including board.....	38	1.5
38.00 per month, including board.....	263	10.4
37.00 per month, including board.....	71	2.8
36.00 per month, including board.....	525	20.9
35.00 per month, including board.....	169	6.7
34.00 per month, including board.....	421	16.7
33.00 per month, including board.....	43	1.7
32.50 per month, including board.....	13	0.5
32.00 per month, including board.....	306	12.2
31.00 per month, including board.....	49	2.
30.00 per month, including board.....	380	14.8
29.00 per month, including board.....	24	0.9
28.00 per month, including board.....	2	0.8
Totals	2,507	100.

Total wages for one month, \$37,153.50.

Average wages for one month, \$34.76.

SWAMPERS.

The number of persons employed as swampers in the timber woods during the season of 1897-98, at specified monthly wages, including board.

Classification of monthly wages.	Number persons.	Per cent.
\$48.00 per month, including board.....	25	1.
41.00 per month, including board.....	16	0.6
40.00 per month, including board.....	2	0.1
39.00 per month, including board.....	23	1.
38.00 per month, including board.....	125	4.9
37.00 per month, including board.....	26	1.
36.00 per month, including board.....	363	14.5
35.00 per month, including board.....	118	4.7
34.00 per month, including board.....	326	13.
33.00 per month, including board.....	74	2.9
32.50 per month, including board.....	14	0.6
32.00 per month, including board.....	453	18.2
31.00 per month, including board.....	28	1.1
30.50 per month, including board.....	26	1.
30.00 per month, including board.....	564	22.3
29.00 per month, including board.....	42	1.7
28.00 per month, including board.....	241	9.5
27.00 per month, including board.....	30	1.2
26.00 per month, including board.....	16	0.6
24.00 per month, including board.....	3	0.1
Totals	2,524	100.

Total wages for one month, \$32,405.

Average wages for one month, \$32.63.

LOADERS.

The number of persons employed as loaders in the timber woods during the season of 1897-98, at specified monthly wages, including board.

Classification of monthly wages.	Number persons.	Per cent.
\$47.00 per month, including board.....	49	3.3
45.00 per month, including board.....	63	4.6
44.00 per month, including board.....	15	1.1
43.00 per month, including board.....	42	3.1
42.00 per month, including board.....	220	16.
41.00 per month, including board.....	7	0.5
40.00 per month, including board.....	77	5.7
39.00 per month, including board.....	5	0.3
38.00 per month, including board.....	321	23.8
37.00 per month, including board.....	70	5.1
36.00 per month, including board.....	176	12.9
35.00 per month, including board.....	32	2.3
34.50 per month, including board.....	13	0.1
34.00 per month, including board.....	101	7.4
33.00 per month, including board.....	22	1.6
32.50 per month, including board.....	2	0.1
32.00 per month, including board.....	5	0.4
30.00 per month, including board.....	147	10.8
Totals	1,367	100.

Total wages for one month, \$51,893.50.

Average wages for one month, \$37.96.

CHAIN TENDERS.

The number of persons employed as chain tenders in the timber woods during the season of 1897-98, at specified monthly wages, including board.

Classification of monthly wages.	Number persons.	Per cent.
\$42.00 per month, including board.....	16	3.5
40.00 per month, including board.....	65	14.4
38.00 per month, including board.....	68	15
37.00 per month, including board.....	18	3.9
36.00 per month, including board.....	51	11.3
35.00 per month, including board.....	15	3.3
34.00 per month, including board.....	34	7.5
33.00 per month, including board.....	15	3.4
32.50 per month, including board.....	4	1
32.00 per month, including board.....	123	27.3
30.00 per month, including board.....	30	6.7
24.00 per month, including board.....	12	2.7
Totals	451	100.

Total wages for one month, \$15,788.
Average wages for one month, \$35.

TEAMSTERS.

The number of persons employed as teamsters in the timber woods during the season of 1897-98, at specified monthly wages, including board.

Classification of monthly wages.	Number persons.	Per cent.
\$52.00 per month, including board.....	6	0.3
50.00 per month, including board.....	12	0.6
45.00 per month, including board.....	92	4.5
44.00 per month, including board.....	18	0.9
43.00 per month, including board.....	42	2
42.00 per month, including board.....	174	8.6
41.00 per month, including board.....	8	0.4
40.00 per month, including board.....	216	10.6
39.00 per month, including board.....	151	7.5
38.00 per month, including board.....	343	16.9
37.00 per month, including board.....	17	0.8
36.00 per month, including board.....	493	24.3
35.00 per month, including board.....	37	1.8
34.50 per month, including board.....	15	0.8
34.00 per month, including board.....	127	6.3
33.00 per month, including board.....	30	1.5
32.50 per month, including board.....	13	0.7
32.00 per month, including board.....	71	3.6
30.00 per month, including board.....	159	7.9
Totals	2,024	100.

Total wages for one month, \$75,811.00.
Average wages for one month, \$37.45.

SCALERS.

The number of persons employed as scalers in the timber woods during the season of 1897-98, at specified monthly wages, including board.

Classification of monthly wages.	Number persons.	* Per cent.
\$30.00 per month, including board.....	1	2.6
80.00 per month, including board.....	2	5.3
75.00 per month, including board.....	1	2.6
70.00 per month, including board.....	2	5.2
60.00 per month, including board.....	10	26.3
55.00 per month, including board.....	4	10.6
60.00 per month, including board.....	4	10.6
45.00 per month, including board.....	5	13.1
41.00 per month, including board.....	1	2.6
40.00 per month, including board.....	1	2.6
36.00 per month, including board.....	2	5.3
35.00 per month, including board.....	1	2.6
31.00 per month, including board.....	4	10.6
Totals	33	100.

Total wages for one month, \$2,022.

Average wages for one month, \$53.21.

LANDING MEN.

The number of persons employed as landing men in the timber woods during the season of 1897-98, at specified monthly wages, including board.

Classification of monthly wages.	Number persons.	Per cent.
\$50.00 per month, including board.....	20	5.7
43.00 per month, including board.....	8	2.3
42.00 per month, including board.....	12	3.4
40.00 per month, including board.....	55	15.6
39.00 per month, including board.....	28	8.
\$38.00 per month, including board.....	25	7.2
36.00 per month, including board.....	63	17.9
35.00 per month, including board.....	3	0.8
34.00 per month, including board.....	77	21.9
32.50 per month, including board.....	6	1.6
32.00 per month, including board.....	30	8.5
30.00 per month, including board.....	25	7.1
Totals	352	100.

Total wages for one month, \$12,986.

Average wages for one month, \$36.89.

ROAD MAKERS.

The number of persons employed in road making in the timber woods during the season of 1897-98, at specified monthly wages, including board.

Classification of monthly wages.	Number persons.	Per cent.
\$11.00 per month, including board.....	12	1.7
40.00 per month, including board.....	10	1.4
39.00 per month, including board.....	7	1.
38.50 per month, including board.....	3	0.3
38.00 per month, including board.....	34	5.
37.00 per month, including board.....	3	0.3
36.00 per month, including board.....	172	25.
35.00 per month, including board.....	12	1.7
34.50 per month, including board.....	6	0.9
34.00 per month, including board.....	108	15.8
33.00 per month, including board.....	6	0.9
32.50 per month, including board.....	4	0.6
32.00 per month, including board.....	128	18.2
31.00 per month, including board.....	25	3.6
30.00 per month, including board.....	130	18.8
28.00 per month, including board.....	8	1.1
27.00 per month, including board.....	1	0.1
26.00 per month, including board.....	25	3.6
Totals	690	100.

Total wages for one month, \$23,035.

Average wages for one month, \$33.38.

COOKS.

The number of persons employed as cooks in the timber woods during the season of 1897-98, at specified monthly wages, including board.

Classification of monthly wages.	Number persons.	Per cent.
\$75.00 per month, including board.....	5	2.8
72.00 per month, including board.....	4	2.8
70.00 per month, including board.....	3	1.8
65.00 per month, including board.....	2	1.2
64.00 per month, including board.....	4	2.3
62.00 per month, including board.....	4	2.3
60.00 per month, including board.....	46	25.9
57.00 per month, including board.....	6	3.2
55.00 per month, including board.....	9	5.
53.00 per month, including board.....	3	1.7
52.00 per month, including board.....	6	3.2
50.00 per month, including board.....	18	10.
48.00 per month, including board.....	12	6.7
47.00 per month, including board.....	5	2.8
45.00 per month, including board.....	12	6.7
43.00 per month, including board.....	1	0.6
42.00 per month, including board.....	1	0.6
41.00 per month, including board.....	4	2.3
40.00 per month, including board.....	29	16.3
38.00 per month, including board.....	4	2.3
Totals	178	100.

Total wages for one month, \$9,387.

Average wages for one month, \$52.73.

COOKS' HELPERS.

The number of persons employed as cooks' helpers in the timber woods during the season of 1897-98, at specified monthly wages, including board.

Classification of monthly wages.	Number persons.	Per cent.
\$39.00 per month, including board.....	2	1.3
38.00 per month, including board.....	8	5.
38.00 per month, including board.....	6	3.8
35.00 per month, including board.....	5	3.1
34.00 per month, including board.....	19	12.
33.00 per month, including board.....	3	2.
32.00 per month, including board.....	28	16.5
31.00 per month, including board.....	6	3.8
30.00 per month, including board.....	44	27.8
29.00 per month, including board.....	6	3.8
28.00 per month, including board.....	31	19.6
25.00 per month, including board.....	1	0.6
24.00 per month, including board.....	1	0.7
Totals	168	100.

Total wages for one month, \$4,947.

Average wages for one month, \$31.31.

BLACKSMITHS.

The number of persons employed as blacksmiths in the timber woods during the season of 1897-98, at specified monthly wages, including board.

Classification of monthly wages.	Number persons.	Per cent.
\$62.00 per month, including board.....	1	2.
60.00 per month, including board.....	2	4.
55.00 per month, including board.....	4	8.2
52.00 per month, including board.....	1	2.
50.00 per month, including board.....	9	18.4
48.50 per month, including board.....	1	2.
47.00 per month, including board.....	5	10.3
45.00 per month, including board.....	4	8.2
42.00 per month, including board.....	2	4.
40.00 per month, including board.....	4	8.2
35.00 per month, including board.....	4	8.2
32.00 per month, including board.....	12	24.5
Totals	49	100.

Total wages for one month, \$2,135.50.

Average wages for one month, \$43.57.

MISCELLANEOUS.

The number of persons employed at miscellaneous work in the timber woods during the season of 1897-98, at specified monthly wages, including board.

Classification of monthly wages.	Number persons.	Per cent..
\$70.00 per month, including board.....	1	0.9
57.00 per month, including board.....	1	0.9
47.00 per month, including board.....	1	0.9
42.00 per month, including board.....	5	4.6
40.00 per month, including board.....	3	2.7
39.00 per month, including board.....	2	1.8
38.00 per month, including board.....	3	2.8
36.00 per month, including board.....	9	8.3
35.00 per month, including board.....	3	2.7
34.00 per month, including board.....	41	37.6
32.00 per month, including board.....	7	6.4
31.00 per month, including board.....	20	18.4
30.00 per month, including board.....	5	4.6
29.00 per month, including board.....	3	2.8
28.00 per month, including board.....	1	0.9
27.00 per month, including board.....	3	2.8
26.00 per month, including board.....	1	0.9
Totals	109	100.

Total wages for one month, \$3,735.

Average wages for one month, \$34.26.

Table II is adapted from the facts shown in Table I to exhibit at a glance the number of employes in each classification, their total; also the range of wages paid, giving the highest, lowest, and average amount received per month by each employe in each division of the work.

TABLE II.

LOGGING.

(Season 1897-98.)

The number employed in each division of employment; also the highest, lowest and average wages paid, including board.

Classification.	Total number employes.	Highest wages.	Lowest wages.	Average wages.
		Per month including board		
Foremen	112	\$105.00	\$40.00	\$67.78
Sawyers	2,507	45.00	28.00	34.76
Swampers	2,525	48.00	24.00	32.63
Loaders	1,367	47.00	30.00	37.96
Chain tenders	451	42.00	24.00	35.00
Teamsters	2,024	52.00	30.00	37.45
Scalers	33	90.00	31.00	53.21
Landing men	352	50.00	30.00	36.89
Road makers	690	41.00	26.00	33.36
Cooks	178	75.00	38.00	52.73
Cooks' helpers	153	39.00	24.00	31.31
Blacksmiths	49	62.00	32.00	43.57
Miscellaneous	109	70.00	26.00	34.26
Total	10,560			

Table III is arranged to show the number and per cent. of employes receiving specified wages grouped in a descending grade; also the total and average monthly amounts. This exhibit consolidates the items of Table I as to the number of employes receiving each sum, and necessarily disregards the classification as to special employment.

TABLE III.

LOGGING.

The number of persons employed in the timber woods during the season of 1897-98, at specified monthly wages, and board (not including 2,200 men at day wages).

Classification of monthly wages.	Number persons.	Per cent.
\$80.00 and over per month and board.....	26	0.24
75.00 per month and board.....	16	0.15
72.00 per month and board.....	11	0.11
70.00 per month and board.....	20	0.2
68.50 per month and board.....	1	0.01
65.00 per month and board.....	12	0.12
64.00 per month and board.....	4	0.04
62.00 per month and board.....	6	0.05
60.00 per month and board.....	71	0.66
57.00 per month and board.....	7	0.06
55.00 per month and board.....	36	0.35
54.00 per month and board.....	5	0.05
53.00 per month and board.....	3	0.03
52.00 per month and board.....	20	0.2
50.00 per month and board.....	64	0.61
48.50 per month and board.....	1	0.01
48.00 per month and board.....	37	0.35
47.00 per month and board.....	60	0.57
45.00 per month and board.....	203	1.93
44.00 per month and board.....	33	0.32
43.00 per month and board.....	93	0.88
42.00 per month and board.....	511	4.84
41.00 per month and board.....	49	0.45
40.00 per month and board.....	578	5.47
39.00 per month and board.....	256	2.42
38.50 per month and board.....	2	0.02
38.00 per month and board.....	1,194	11.3
37.00 per month and board.....	204	1.94
36.00 per month and board.....	1,865	17.66
35.00 per month and board.....	399	3.77
34.50 per month and board.....	34	0.32
34.00 per month and board.....	1,254	11.87
33.00 per month and board.....	193	1.82
32.50 per month and board.....	56	0.53
32.00 per month and board.....	1,164	11.02
31.00 per month and board.....	132	1.25
30.50 per month and board.....	26	0.24
30.00 per month and board.....	1,464	13.87
29.00 per month and board.....	75	0.71
28.00 per month and board.....	283	2.68
27.00 per month and board.....	34	0.32
26.00 per month and board.....	42	0.4
25.00 per month and board.....	1	0.01
24.00 per month and board.....	16	0.15
Totals	10,560	100.00

Total wages for one month, including amount received in excess of \$80.00 (see first item), \$378,890.00.

Average wages for one month, \$35.88.

Average wages for one month, if foremen are not considered in the calculation, \$35.53.

Table IV is a re-arrangement of the information given in detail in Table III. There is here given the number of persons and percentage receiving per month the following sums and more: \$50.00, \$40.00, \$35.00, and \$30.00; also the number and percentage receiving less than \$30.00 per month. This table also disregards the classification as to employment which is elsewhere fully given:

TABLE IV.

LOGGING.

(Season 1897-98.)

The number of persons employed and per cent. at and above certain fixed sums per month, here indicated (not including 2,220 men working at day wages).

Classification of monthly wages.	Number persons.	Per cent.
\$50.00 and over per month including board.....	302	2.88
\$40.00 and over per month including board.....	1,896	17.7
\$35.00 and over per month including board.....	5,786	54.81
\$30.00 and over per month including board.....	10,109	95.73
Less than \$30.00 per month including board.....	451	4.27
	10,560	100.00

In Table V appears the classification of employment, and the number and percentage of persons in each division of the work that receive the following sums and more per month: \$50.00, \$40.00, \$35.00, and \$30.00; also the number and percentage receiving less than \$30.00 per month. The information here shown is an amplification of previous tables; the number and percentage, of persons receiving the specified amounts and over, referring only to the particular class of employment, and not to the industry as a whole:

TABLE V.
LOGGING AND DRIVING.
(Season 1897-98.)

Classification of monthly wages paid in the timber woods during the season of 1897-98 (not including 2,220 men at day wages), giving the number and per cent. of persons at, above and below certain fixed sums per month, including board.

Classification.	\$50.00 and over per month.		\$40.00 and over per month.		\$35.00 and over per month.		\$30.00 and over per month.		Less than \$30.00 per month.	
	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.
Foremen	111	99.	112	100.						
Sawyers			223	8.6	1,289	50.9	2,481	98.3	26	1.7
Swampers			43	1.7	703	27.8	2,193	86.9	332	13.1
Loaders			473	34.3	1,077	78.7	1,367	100.		
Chain tenders			81	17.9	233	51.4	439	97.3	12	2.7
Teamsters	18	9.	568	27.9	1,609	79.2	2,024	100.		
Scalers	24	63.2	31	81.5	34	89.4	38	100.		
Landing men	20	5.7	95	27.	214	60.9	352	100.		
Road makers			22	3.1	251	36.4	656	95.2	34	4.8
Cooks	110	41.7	174	97.7	178	100.				
Cooks' helpers					21	13.2	119	75.3	39	24.7
Blacksmiths	17	34.6	33	67.3	37	75.5	49	100.		
Miscellaneous	2	1.8	11	10.	28	25.6	101	92.6	8	7.4

Table VI conveys the facts as to employes under consideration in still another form.

The number of employes is shown for each class and the percentage such number bears to the total of 10,560 (not including day men); also the total amount of wages for one month for each class, and the percentage it bears to the total wages for one month:

TABLE VI.
PERSONS EMPLOYED IN TIMBER WOODS.

Aggregates showing number of persons in each classification and their total wages for one month, including per cent. of each with reference to the total.

Classification.	Number of persons.	Per cent.	Total wages for one month including cost of board.	Per cent.
Foremen	112	1.1	\$7,591.50	2.
Sawyers	2,507	23.7	87,153.50	28.
Swampers	2,525	23.9	82,405.00	21.7
Loaders	1,367	13.1	51,893.50	13.9
Chain tenders	451	4.2	15,788.00	4.1
Teamsters	2,024	19.2	75,811.00	20.
Scalers	33	.3	2,022.00	0.5
Landing men	352	3.3	12,986.00	3.4
Road makers	690	6.5	23,036.00	6.
Cooks	173	1.7	9,387.00	2.5
Cooks' helpers	158	1.5	4,947.00	1.3
Blacksmiths	49	.4	2,135.50	.6
Miscellaneous	109	1.1	8,735.00	1.
Totals	10,560	100.	\$378,890.00	100.

Table VII discloses the number of persons employed in the timber woods during each of the months of the season of 1897-98.

It will be seen that during January, 1898, the greatest number were employed. January is, therefore, taken as the standard for full employment, 100%; that is, it is assumed for the purpose of comparison, that all persons qualified and available to work in this industry were then at work.

With January as a basis, the percentages of "Employment" and "Unemployment" of the other eleven months are calculated and here shown. Thus in February the percentage of employment was 95+ $\frac{1}{2}$ % of the standard and the percentage of those idle was 4+ $\frac{1}{2}$ %.

TABLE VII.

LOGGING AND DRIVING.

Aggregates by months during the logging season of 1897-98, showing the percentage of those employed and unemployed.

MONTHS.	Number persons.	PERCENTAGE.	
		Of employment.	Of unemployment.
1897—			
November	8,703	78.19	21.81
December	10,669	95.85	4.15
1898—			
January	11,130	100.00	.....
February	10,630	95.51	4.49
March	7,662	68.75	31.25
April	2,182	19.60	80.40
May	2,273	20.42	79.58
June	2,290	20.57	79.43
July	1,686	15.15	84.85
August	1,318	11.84	88.16
September	2,407	21.62	78.38
October	4,224	37.95	62.05

Tables VIII and IX deal with the day labor employed in driving logs.

In the former the amounts paid as wages are arranged in descending scale and opposite thereto appear the number and percentage of persons receiving each sum per day, including board.

In Table IX the showing is condensed and the number and percentage of employes is given that receive per day the following sums and more: \$3.00, \$2.50, and \$2.00; also the number and percentage of persons earning \$2.00 per day and less.

TABLE VIII.

LOG DRIVING.

The number of persons employed at driving logs in the timber woods during the season of 1897-98, at specified daily wages and board.

Classification of daily wages.	Number persons.	Per cent.
\$3.40 and over per day and board.....	15	0.65
3.00 per day and board.....	128	5.80
2.75 per day and board.....	162	7.24
2.65 per day and board.....	107	4.90
2.50 per day and board.....	945	42.60
2.40 per day and board.....	181	8.09
2.25 per day and board.....	274	12.30
2.20 per day and board.....	30	1.40
2.15 per day and board.....	58	2.60
2.00 per day and board.....	232	10.40
1.90 per day and board.....	40	1.90
1.75 per day and board.....	20	0.90
1.50 per day and board.....	23	1.00
1.40 per day and board.....	5	0.22
Totals	2,220	100.00

Total wages for one day, \$5,285.

Average wages for one day, \$2.38.

TABLE IX.

LOG DRIVING.

The number of persons employed and per cent. at and above certain fixed sums per day, here indicated.

Classification of daily wages.	Number of persons.	Per cent.
\$3.00 and over per day including board.....	143	6.45
\$2.50 and over per day including board.....	1,357	61.19
\$2.00 and over per day including board.....	2,132	95.98
Less than \$2.00 per day including board.....	88	4.02
Totals	2,220	100.00

The preceding tables and the deductions and comments made thereon have been based upon the rate per month in the case of employes generally in the timber woods and the rate per day in the case of log drivers. As has been noted, the men receive board in addition to the wages shown.

In order that the earnings in this employment may be intelligently compared and considered with the earnings in other occupations, the wages have been reduced to a weekly rate, and \$12.00 per month, which is generally recognized as the value of board in the woods, or \$3.00 per week, has been added in order that the basis may be uniform.

The monthly earnings shown in Table III have been reduced to a weekly basis in the above table and \$3.00 per week added for cost of board.

THE NUMBER AND PER CENT. OF PERSONS EMPLOYED IN THE TIMBER WOODS DURING THE SEASON OF 1897-98, AT SPECIFIED WEEKLY WAGES.

The monthly earnings shown in table III. have been reduced to a weekly basis in the above table, and \$3.00 per week added for cost of board.

Classification of weekly wages.	Number.	Per cent.
Under \$5.00 per week.....		
\$5.00 per week but under \$6.00.....		
6.00 per week but under 7.00.....		
7.00 per week but under 8.00.....		
8.00 per week but under 9.00.....		
9.00 per week but under 10.00.....	93	0.88
10.00 per week but under 12.00.....	5,090	48.08
12.00 per week but under 15.00.....	5,047	47.80
15.00 per week but under 20.00.....	266	2.53
20.00 per week and over.....	74	0.71
Totals	10,560	100.00

THE NUMBER AND PER CENT. OF PERSONS EMPLOYED AT DRIVING LOGS IN THE TIMBER WOODS DURING THE SEASON OF 1897-98, AT SPECIFIED WEEKLY WAGES.

The daily earnings as exhibited in table VIII. have been changed in this table to a weekly basis of earnings, and \$3.00 per week has been added to embrace the cost of board in the rate per week.

Classification of weekly earnings.	Number.	Per cent.
Under \$5.00 per week.....		
\$5.00 per week but under \$6.00.....		
6.00 per week but under 7.00.....		
7.00 per week but under 8.00.....		
8.00 per week but under 9.00.....		
9.00 per week but under 10.00.....		
10.00 per week but under 12.00.....	5	0.22
12.00 per week but under 15.00.....	83	3.80
15.00 per week but under 20.00.....	1,999	89.53
20.00 per week and over.....	143	6.45
Totals	2,220	100.00

COMPARISON OF RESULTS.

The foregoing pages in this part have been devoted to investigations of the "Classified Weekly Earning" and numerous other facts concerning the conditions of "Employment" in 1898, first, of 96,081 persons employed in 55 industries in the manufacturing line; second, of 13,808 persons employed in 6 industries in the mercantile line; third, of 18,800 persons employed in 14 so-called skilled trades, 2,164 persons employed

in Coal handling, 1,284 persons employed in Mining, 1,168 persons employed in Stone Quarries; fourth, of 12,780 persons employed in logging, etc., in the timber woods. The data for each of these investigations have been presented and explained with considerable detail and the results fully stated. The most important among the results thus obtained are, perhaps, those which relate to the "Classified Earnings" and the "Range of Unemployment;" and, in order to facilitate comparisons as between the industries, these results are again presented in the following two exhibits:

COMPARISON OF EARNINGS IN SPECIFIED INDUSTRIES IN 1898.

INDUSTRIES.	Number of persons employed.	PER CENT. OF PERSONS RECEIVING				
		\$9.00 per week and over.	\$7.00 per week and over.	\$6.00 per week and over.	\$5.00 per week and over.	Under \$5.00 per week.
Manufactures	96,081	42.53	68.24	77.44	82.59	17.11
Mercantile lines	13,808	36.71	55.82	68.63	78.98	21.02
Skilled trades	18,800	69.12	83.83	88.70	92.19	7.81
Coal, wood handling	2,184	72.63	95.13	97.81	98.82	1.18
Mining	1,284	34.63	97.44	99.35	99.65	1.15
Quarrying	1,168	43.35	81.53	91.63	98.13	1.87
*Logging, etc.	12,780	100.00	.....	.....	.....	.....

*No one under \$9.00 per week.

The above presentation exhibits, by industries, the per cent. of persons who received specified sums and over per week, when employed. Seven industries are included. Of these, the first in order, or manufacturers, is one which requires both skilled and unskilled help. The second in order is mercantile establishments. Those employed there are mostly salaried persons, and persons of some education. For purposes of comparison, however, they have been included here. Next is the skilled trades. Then comes coal handlers, miners, quarrymen, and loggers. These four are usually classed as unskilled labor. They are occupations, however, where a great deal of physical strength is required.

Now as to the earnings. In this respect it is difficult to explain their relative position. In manufactures we find that 42.53 per cent. of the whole number reported in this industry earned \$9.00 and over per week. From this it follows that 57.47 per cent. received less than this amount. The next class

is \$7.00 and over. Here we find 68.24 per cent. of the employes. At \$6.00 and over 77.44 per cent., and in \$5.00 and over 28.89 per cent., while 17.11 per cent. received less than \$5.00. These facts indicate fairly well the position of manufactures. Comparing them with those for the other industries it is possible to point out the position of each. Thus we find that the mercantile lines show a lower scale than manufactures, in fact, the lowest for all. Manufactures has the second place; Quarrying the third; Mining the fourth; Skilled trades the fifth; Coal, etc., handlers the sixth and logging the seventh or highest place. The so-called skilled trades are thus immediately preceded, in point of earnings, by two as well as followed by two occupations usually classed as common labor. That common labor should show an earning practically on the par with skilled hands may not look right. When it is remembered, however, that the occupations here classed as labor are among the highest paid, and their work of such character as to exclude women and minors, and when the facts also are considered that the above figures for the skilled trades include besides the skilled hands not only the unskilled, helpers and laborers employed, but women and minors as well, the situation becomes plain.

This conveys some idea of the relative earnings per week, or for six working days, in the different industries. About the possible earnings for longer periods, a year for instance, the facts given disclose nothing. For this reason the following exhibit, which shows the range of unemployment for each of the industries, is also included:

RANGE OF UNEMPLOYMENT IN SPECIFIED INDUSTRIES IN 1896.

Months.	Manu- factures.	Mercan- tile lines.	Skilled trades.	Coal, etc., handl'g.	Mining.	Quarry- ing.	Logging, driving.
January	17.04	12.36	42.93	33.89	4.72	50.93	.....
February	15.76	12.86	41.08	40.08	4.49	50.11	4.49
March	12.00	11.36	30.88	43.08	.....	46.21	31.25
April	4.76	8.64	14.67	43.28	7.35	19.10	80.40
May .....	.32	7.06	9.43	34.95	6.50	21.57	79.58
June .....	.....	5.34	.....	30.31	7.65	.....	79.43
July .....	.59	7.06	2.00	22.17	5.19	6.18	84.85
August .....	.66	8.07	5.42	21.01	2.63	9.66	88.16
September .....	.97	4.82	5.98	19.66	3.10	6.99	78.38
October	2.03	2.75	2.49	.....	3.10	7.60	62.06
November	4.70	2.33	15.89	14.04	7.20	18.60	21.81
December	9.03	.....	28.56	23.53	7.74	47.69	4.15
Averages ...	6.37	7.50	16.60	27.16	4.96	23.00	55.87

This exhibit shows, as said, the "Range of Unemployment" for the seven industries included. The month when the greatest number were employed is regarded as full employment. For the other months the range is denoted by the per cent. of the number employed of the number for the month with the greatest number. This is readily illustrated. In manufacturing, for instance, the greatest number for any month were found for June. This month, therefore, there was no unemployment. The smallest number was found for January. The number for this month constituted 17.04 per cent. of those for January, and this per cent. is, therefore, regarded as the range of unemployment for that month, or for January. For the other months the range is more narrow. In four cases it is only a fraction of one per cent. The average monthly unemployment for this industry is 6.37 per cent.

In mercantile lines the greatest number were employed in December and the smallest in February, and the range for these months was 12.86 per cent. The average range was 7.50 per cent., or nearly the same as for manufactures.

In the skilled trades, June was the greatest and January the smallest in point of the number employed. The range of unemployment for this month was 42.93 per cent., while the average was 16.60 per cent.

For Coal handlers the widest range was 43.28 per cent., and the average 27.16 per cent. For Mining the range was narrow, the average being only 4.95 per cent. For Quarrymen and Loggers, on the other hand, the range was extremely wide. For the former it amounted to over one-half; in the latter almost nine-tenths when the lowest number were employed. The average range for these two industries was 23.00 and 55.87 per cent., respectively. This illustrates how irregular employment is and how small is the chance for a large portion of the workers to find steady employment in one occupation.

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PART VII.

FACTORY INSPECTION.

FACTORY INSPECTION.

With respect to factory legislation and its enforcement, the last legislature of this state, that of 1899, took a long forward step. Without going into details it can be said that this legislature enacted more laws for the protection of employes in factories and workshops than that of any other state. In fact the legal restrictions affecting places where workmen are employed were practically increased one hundred per cent. But the legislature did not stop at this. While doubling the restrictions it trebled the means for their enforcement. In other words, it increased the number of inspectors in this Bureau from two to seven. This increase in the means for enforcing the laws is of the greatest importance. Without an adequate inspection service factory legislation is practically ineffective.

As just intimated, it is a part of the duties of this Bureau, or of its officers, to enforce the so-called factory laws. But what do these duties really imply? By enforcing the law is mostly understood, to make people live up to its provisions. But our duties mean more than this. They imply that we must first find out whether the law is lived up to and then, if it is not, proceed to make people do so. We cannot wait for complaints to be made. We must discover the violation as well as make complaint about it. Now, this means, that we must first inspect every place that comes within these laws, and then, when violations are discovered, order a remedy. If this order is not complied with we must bring criminal proceedings against the party or parties who are responsible for the neglect and the case be adjudged before court. To discover violations careful inspections are necessary. To remedy such violations we must prove their actual existence. All this requires an immense amount of labor.

For the purpose of enforcing the laws, regular and systematic

inspections have been made by the inspectors. At these inspections every part or object affected by the law was carefully examined and the condition fully reported upon. In order to facilitate this work the places covered were classified as Factories and Workshops; Cigar factories; Sweatshops; Hotels, Boarding- and Tenement Houses; Schools; Churches, and other Public Buildings; Office Buildings and Store Houses; Mercantile Establishments. For the places under each of these classes a special blank for reports was prepared. These blanks contained questions concerning the number and condition of each part affected by the law, so arranged that the answers would indicate the condition. One of these blanks was filled out for each building inspected, and report covered not only the building itself but everything in or about the same.

As said, a special blank was used for each class of buildings. Besides the name of the person or firm occupying the same, or the name by which the building is known; there is given the location of same; the business carried on in it, or the purpose for which used, and the kind and height of building. Each of these kinds of blanks contain questions bearing upon the conditions affected by the law.

Thus, the blank used for factories and workshops relates among other things to the hours of labor which constitute a day's work; the number of employes classified as to sex and age; the number, power and condition of the boilers used; the number of accidents; the size of each room and number of persons employed on each floor or room; the number and condition of the fire escapes, standpipes, stairways, elevators, hoists, machinery, emerywheels, vats, exits; the sanitary condition; the kind signals; and to seats for female employes.

The blank for Cigar factories relates among other things to the persons employed classified as to age and sex; the hours of labor; seats for females; the size of each work room and the number and size of windows in each; the means and condition of ventilation; whether work rooms are dusted and scrubbed as provided by the law; the number and condition of the closets; the sanitary condition in general as well as to the means of escape in case of fire and to safety appliances when machinery was used.

For Sweatshops, the blank reported on relates among other

things to whom the goods was made for, whether made for wholesale or directly for the retail trade; the number of persons employed classified as to sex and age; the size of each work room and of each window in it; the hours of labor, whether work rooms are also used for living and sleeping rooms, or connected with other rooms used for these purposes, also whether they contain beds, bedding, and cooking utensils, and have separate entrance, whether sufficiently lighted, heated, and ventilated; the number of persons in each room; the number, location and condition of closets; whether cleaning, painting, or whitewashing was needed; and the sanitary condition in general of the shop as well as surroundings.

The blank for Hotels, etc., covers among other things the number of rooms on each floor; the number and condition of fire escapes, stairways, elevators, exits, etc.; whether the rules relating to lights, notices and watchman are complied with; the average number of guests per day; the number of persons employed classified as to sex and age; the location of employes' rooms, etc.

For schools, churches, opera houses, office buildings, etc., the blank relates principally to the seating capacity, or number of persons that can be accommodated on each floor; the number, condition, etc., of fire escapes, stairways, elevators, doors, and other means of escape in case of danger, and the condition in general.

In the blank for Mercantile establishments the questions embrace among other facts, the number of persons employed classified as to sex and age; the number on each floor; whether female clerks are provided with seats; the means of escape in case of fire; the condition of the elevators, etc.

The facts thus enumerated are among the more important of those inquired about, those upon which the law is definite or effects the most. They are also facts about which full information is necessary in order to judge of the condition, or take action of any kind.

From the reports thus made by the inspectors a varied lot of information was obtained—information that is of value not only because of the light it throws upon conditions with respect to the

various provisions in the factory acts, but for what it shows concerning industrial facts in this state.

Because of the nature of bulk of the facts thus gathered it was found to be out of the question to present them in full. For the more important inspections, however, the name of the establishment or place visited is given, together with some other facts that bear upon its importance and condition. Thus, for factories and workshops it will be found, that the name, location, business, number of buildings occupied, number of persons employed, the number and power of the boilers used for each establishment are given under one head, while under another is presented the orders issued, and under a third a summary of the parts examined, their condition and orders issued. This is mentioned as an illustration only. The facts presented and the manner of presentation necessarily varies with each class of reports.

Besides the places enumerated, or classified above, Bowling alleys, Summer gardens, and similar places, where young children are usually employed, have also been regularly inspected. In these as in most other places the laws are constantly violated.

The laws which regulate the condition in factories and of employment in this state are presented in full in part I, of this report. In the following discussion of these laws and the court decisions upon them, the more important ones are presented again.

FACTORY LAWS AS POLICE REGULATIONS.

BY AUGUST C. BACKUS.

Police powers have their origin in the law of necessity. Blackstone in his commentaries construes the law of necessity as that of self defense, and does not apply it strictly to the idea of government; but later in his work he enumerates "offenses against the public health and the public police or economy which we distribute more accurately under the head of Police powers. Police powers are inherent in every sovereignty, as Justice Waite says: "The very existence of government pre-supposes the right of the sovereign power to prescribe regulations demanded by the general welfare for the common protection of all." The object of government and law is the welfare of the people. It is not, however, the welfare of the individual, but that of society, which is the first object of the law. In the progress of civilization, and as the larger limits for the necessary exercise of police powers are recognized, as new occasions and new demands arise the legal relations of the citizens are more and more perfectly defined and limited by public statutes, and less difficulty will be found in any exigency for its determination under the appropriate law and authority.

In the days when popular government was unknown the king ruled by the divine right, his word was the law and no natural rights were acknowledged in the individual at all. The divine right of kings has changed in this country, and the governmental power is now derived from the people.

In England where we find a country without a written constitution, Parliament is, in all things, practically supreme. The provisions of the Magna Charta and the Bills of Rights, though long regarded with reverence, are a little more than legislative enactments, subject to repeal or alteration by Parliament. Lord Coke says.—

"The power and jurisdiction of parliament is so transcendent and absolute that it can not be confined, either for persons or

causes, within any bounds, and of this high court it may be said: *Si antiquitatem spectes est vetustissima; si dignitatem est honoratissima, si jurisdictionem est capacissima.* It hath sovereign and uncontrolled authority in the making, confirming, enlarging, restraining, abrogating, repealing, reviving and expounding of laws concerning matters of all possible denominations, ecclesiastical or temporal, civil, military, maritime, or criminal, thus being the place where that absolute despotic power, which must in all governments reside somewhere, is intrusted by the constitution of these kingdoms, all mischiefs and grievances, operations and remedies, that transcend the ordinary course of the laws, are within the reach of this extraordinary tribunal. . . . It can change and create afresh even the constitution of the kingdom, and of Parliament themselves. . . . It can, in short, do everything that is not naturally impossible, and therefore some have not scrupled to call its power the omnipotence of Parliament. This is true, that what Parliament doth, no authority upon earth can undo." *Hawthorne vs. People*, 109 Ill. 305. 4 Inst. 36; *Cooley's Const. Lim.* (1st Ed.), 85.

In our country this sovereignty or transcendent power of government resides in or with the people. Both United States and state have its constitution which is deemed the fundamental law of the land, and which limits and restrains the legislative freedom of congress and the state legislature. Judge Cooley says (*Const. Lim.*, 85): "That in considering the legislative powers of our states it is natural that we should incline to measure such power by the power of a like debt in Great Britain, but we should not be misled, because we must bear in mind that in Parliament rests the sovereignty of the country, and it may therefore exercise all governing power, while complete sovereignty is not vested in ours because they are hedged about with limitations, imposed in express terms or by implication." The principal constitutional limitations which are designed to protect private rights against the arbitrary exercise of governmental power, and which therefore operate to limit and restrain the exercise of police powers, are as follows:

1. No bill of attainder or ex post facto law shall be passed by the United States or by the states.

2. No state shall pass any law impairing the obligation of a contract.

3. Neither slavery nor involuntary servitude, except as a punishment for crime whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction.

4. The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated; and no warrants shall issue but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the person or thing to be seized.

5. No soldier shall, in time of peace, be quartered in any house without the consent of the owner; nor in time of war, but in a manner to be prescribed by law.

6. The right of the people to keep and bear arms shall not be infringed.

7. Congress shall make no law respecting an establishment of religion or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press, or the right of the people, peaceably to assemble, and to petition the government for a redress of grievances.

8. No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service in the time of war or public danger; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty or property without due process of law, nor shall private property be taken for public use without just compensation.

9. In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the state and district wherein the crime shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation, to be confronted with the witness against him, to have compulsory process for obtaining witnesses in his favor, and to have the assistance of counsel for his defense.

10. Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishment inflicted.

11. The privilege of the writ of habeas corpus shall not be suspended, unless when in cases of rebellion or invasion the public safety may require it.

12. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States, nor shall any state deprive any person of life, liberty or property without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws.

13. The right of the citizens of the United States to vote shall not be denied or abridged by the United States, or by any state on account of race, color, or previous condition of servitude.

The states have also restricted by their constitution what is deemed best for the welfare and interest of the people. Public policy and public necessity which is the basis of the theory of police power, is deemed as it were, to be superior even to the constitution. The restrictions of the constitution may have been enacted for the highest interest of the people; yet if any enactment shall prove to be unquestionably detrimental to the supreme right and necessity of the preservation of public health, morals, safety or convenience, then it must yield thereto and be deemed to have been enacted subject to such necessity, a question which is to be construed and decided by the courts.

It is useless for me to begin to outline the vast number of decisions which have been handed down determining the constitutionality of legislative enactments. Laws which are passed today would probably have been declared unconstitutional twenty or thirty years ago. As said before, public policy is the controlling factor of all laws. Whatever is injurious to the public health, public welfare, public safety or public morals and public convenience is the subject of police power and regulation. *Town of Lake View vs. Rose Hill Cemetery*, 70 Ill., 191; *Barber vs. Connolly*, 103 U. S., 27; *Kinnish vs. Ball*, 129 U. S., 217; *Sentel vs. New Orleans*, 166 U. S., 698; *Berling vs. City of Evansville*, 42 N. E., 621; *Fox vs. Mohawk*, 46 N. Y. S., 232; *State vs. Lee*, 38 S. W., 583; *State vs. Main*, 69 Conn., 123; *In re Waters*, 32 N. Y. S., 322; *People vs. Warden*, 39 N. E., 686; *Decree vs. Brown*, 45 N. E., 765; *City of Newton vs. Joyce*, 44 N. E., 116; *Luch vs. Sears*, 44 P. 693; *Council of Charleston vs. Warner*, 24 S. E. 207; *Hawthorne vs. People*, 109 Ill., 305;

City of N. Y. vs. Milu, 11 Peters U. S., 103; Munn vs. Colvin, 44 P., 783.

The police power of a state is coextensive with self protection and applicably terms the law of overruling necessity. It is evident as society advances, new laws must be made to comply with all such advancements. Every year, each state adds to its code of laws by legislative enactments that which is deemed best for society, may it be its criminal, civil or commercial code; all is done for the welfare and benefit of the public. It is for that very reason that the laws known as the factory laws, were passed in our state.

When factories sprang into existence although operating for a good purpose, they brought with them many evils. They opened the doors for the labor of thousands of little children, who were forced to spend their youthful lives at hard and dreary work. Hundreds of men and women were employed in factories where the sanitary conditions were such as to promote disease and death. Dangerous machinery stood unprotected buzzing within a few feet of thousand inexperienced laborers.

With all this we can readily see the necessity of having laws commanding the protection and fencing of such dangerous machinery. The enforcement of sanitary laws. The protection from employment of little children who were doomed to work with their tender little hands and grow up in ignorance and vice, becoming a helpless factor in promoting the interests of the state. We may ask, why should men and women be forced to work in close, filthy, unwholesome rooms where nothing but disease prevails? Are not the the lives of the laborer and little children as much to the state as the manufacturers. Does not the future prosperity of the state depend on the growth of the little child? There must be a remedy for all these evils, and such remedy is obtained by the legislature through its efficient police powers which works for the promotion of its individuals and for the welfare of the community. Society demands all that is necessary for the common good and interest of its members. In years gone by it would have been unreasonable to think that every factory and hotel should be provided with fire escapes when there were but four or five rooms in the whole building; but today where

those buildings stand as monuments in the sky, where hundreds of rooms are opened for public use, it becomes necessary in case of fire or unforeseen peril that those therein should have some possible means of escape. It was therefore necessary in order to protect the inmates, that every factory and hotel of a certain description should be provided with fire escapes.

We have many laws upon our statute books which are deemed for the public good, some of which this department will rigidly enforce. They are not the first of its kind in this state; but are to be found in nearly every state in the union. The necessity of these laws we readily see, without further explanation. It may meet the disapproval of many whose interests are directly concerned, yet the public welfare cannot be impaired by dispensing with them. In both, the state and United States courts we find adjudicated cases bearing out the constitutionality of these laws. The principle involved has been repeatedly upheld.

The following are the Inspection and Labor Laws of this state:

Statutes of 1898 and Acts of 1899.

BUREAU OF LABOR AND INDUSTRIAL STATISTICS.

OFFICE AND SUPPLIES

Section 1021b. The bureau of labor and industrial statistics, heretofore established, is continued. A room or rooms in the capitol shall be set apart for the use thereof, and such printing shall be done for and such supplies furnished the same as may be necessary for the performance of the duties devolved upon the officers thereof.

APPOINTMENT OF COMMISSIONER.

Section 1021c relates to the appointment and term of office of the commissioner of this bureau.

ASSISTANTS FOR.

Section 1021d authorizes the commissioner to appoint a deputy, clerks, and factory or assistant factory inspectors.

COMMISSIONER'S DUTIES.

Section 1021e. Said commissioner shall collect, collate and publish statistical and other information relating to the manufacturing interests, industrial classes and material resources of the state; he shall especially examine into the relations between labor and capital, the means of escape from, and the protection of life and health in, factories and workshops, the employment of children, the number of hours of labor exacted from them and from women, the educational, sanitary, moral, financial condition of laborers and artisans, the cost of food, fuel, clothing, and building material, the causes of strikes and lockouts, and other kindred subjects pertaining to the welfare of the industrial interests and classes.

ENTRY INTO FACTORIES, ETC.; NOTICE OF VIOLATION OF LAW.

Section 1021f. The commissioner, his deputy, the factory inspector and the assistant factory inspector may enter any factory, mercantile establishment or workshop in which laborers or women are employed, for the purpose of obtaining facts and statistics, examining the means of escape therefrom in case of fire and the provisions made for the health and safety of operators or for suitable seats for women therein. If any such officer shall learn of any violation or of neglect to comply with the law in respect to the employment of children, the hours of labor for them or for women, or in references to fire escapes or the safety of employees, or such seats for women, he shall give written notice to the owner or occupant of such factory, mercantile establishment or workshop, of such offense or neglect, and if the same is not remedied within thirty days after the service of such notice, such officer shall give the district attorney of the county in which such factory, mercantile establishment or workshop is situated formal notice of the facts, whereupon that officer shall immediately institute the proper proceedings against the person guilty of such offense or neglect.

FIRE-ESCAPES IN HOTELS.

Section 1021g. Any such officer may examine hotels and lodging or boarding houses for the purpose of discovering whether they are properly equipped with fire escapes, and may post in any such building so examined the laws relating to such escapes together with his official statement as to whether said laws are fully complied with by the keeper thereof; and any such keeper or other person who shall mutilate, destroy or remove from any building or buildings the said laws or statement so posted shall be fined fifty dollars for each and every offense. Whenever any hotel, lodging or boarding house posted as not complying with such laws shall be properly provided and equipped with fire-escapes and the Bureau shall be notified thereof the commissioner shall at once order a new statement, setting forth that fact, to be posted therein, and he shall keep a record of all buildings so examined and posted.

PROTECTION OF EMPLOYEES; DISREGARD OF ORDERS.

Section 1021h. Any officer of the bureau may post in any factory or workshop examined by him the laws relating to the employment of children therein, hours of labor, fire-escapes or other matters pertaining to the health and safety of artisans; any person who shall remove or mutilate such laws so posted shall be fined fifty dollars for each offense. Any such officer may order bull-wheels, fly-wheels, tumbling rods, elevator wells, stairways, shafting or dangerous machinery of any kind to be enclosed or otherwise guarded so as to protect workmen or others; and any person refusing to obey the written order of such officer to such effect shall be fined fifty dollars for each such refusal. It shall be the duty of such officers to examine freight and passenger elevators and to condemn those found to be defective and unsafe by serving written notice on the person for whom it is being operated or on his agent, or by posting such notice on the walls or cab of any elevator found to be in an unsafe condition; the owner of any elevator so condemned, or the person for whom it is being operated, shall, by continuing the use thereof without making such repairs as will place it in a safe condition, be liable, civilly and criminally, for any physical injury caused by such use, whether such injury results in the death of the person injured or not. It is also the duty of such officers, when in their judgment it may be necessary, to see that in every manufacturing establishment, the machinery in which is propelled by steam power, communication, by means of speaking tubes or electric bells, shall be provided between each room in which machinery so operated is placed and the room in which the engineer is stationed. Any person occupying as owner, lessee or manager any manufacturing establishment where machinery so operated is used, or controlling the use of any building or room in which machinery propelled by steam is used, who shall fail to provide such means of communication shall be fined not less than ten dollars nor more than fifty dollars; but no prosecution shall be commenced

for such violation until thirty days after written notice has been given by one of the officers designated in this chapter to such person of the changes necessary to be made to comply with the provisions hereof, nor then, if, in the meantime, changes have been made in accordance with such notice.

REFUSING ADMITTANCE AND FAILING TO MAKE RETURNS.

Section 1021i. The said commissioner shall have power to prescribe blank forms and transmit them to employers, which shall be filled out clearly and completely, under oath, by the persons to whom they are sent, with the facts, statistics and statements asked for, and returned to him within such reasonable time as he may fix. In case any owner or occupant or his agent shall refuse to admit any officer of the said bureau to his workshop or factory, he shall forfeit the sum of ten dollars for each and every offense, and if he shall, through his agent or otherwise, neglect, fail or refuse to fill out the said blank forms and verify and return them as required, he shall forfeit the sum of ten dollars for each and every day the said blank may be so delayed beyond the time fixed by the commissioner for their return. The fines authorized by this chapter shall be sued for in the name of the state by the district attorney of the proper county upon complaint of any officer of said bureau or any citizen, and shall be paid into the school fund.

SEAL; OATHS; WITNESS FEES.

Section 1021j. There shall be provided a seal of office for the use of the bureau, and the commissioner or his deputy, for the purpose of making any investigation contemplated by this act, shall have power to administer oaths, take testimony and subpoena witnesses, which witnesses shall receive the same fees as are allowed to persons testifying in circuit courts, to be paid out of the state treasury on the certificate of the commissioner or his deputy; provided, however, that no person subpoenaed by the said commissioner or his deputy shall be compelled to go outside of the city or town in which he resides to testify in behalf of such investigation.

REPORT.

Section 1021k. The commissioner shall make a report to the governor within ten days after the expiration of the biennial fiscal term, which report shall be printed and bound as provided by law.

DUTY OF DISTRICT ATTORNEY.

Section 1021l. Whenever any officer of the bureau of labor and industrial statistics shall give written notice to any district attorney that any hotel, factory, public building or any other structure in his county is being used without fire-escapes, watchmen or other means of safety prescribed by law, including means of communication between the rooms of manufacturing establishments as prescribed in section 1021h, such district attorney shall at once institute the proper proceeding against the offender, and without the aid or presence of any such officer do all that may be necessary to secure a determination of the guilt or innocence of the person complained of; and in case such district attorney shall refuse or neglect so to do any officer of such bureau may file charges against him and demand his removal from office.

FIRE-ESCAPES ON BUILDINGS.

Section 1636ee. Every inn, hotel, boarding-house, store-house, or tenement building more than two stories high and containing, above the ground floor, sleeping apartments, offices, an assembly hall, work rooms or a room intended to be used as a place of amusement, all or any of which rooms are designed for occupancy by twenty-five or more persons, shall be provided with one or more fire-proof stairways or ladders on the outside thereof, placed in such position and as many in number as may be designated by the chief of the fire department or fire marshal of the village or city in which the building is located, or by the state factory inspector. If more than one stairway or ladder are re-

quired, each side of such inn, hotel, boarding-house, store-house or tenement building shall be provided therewith. Such stairways or ladders shall connect the cornice with the top of the first story of any such building by a wrought-iron platform, balcony, piazza, or other safe and convenient resting place on a level with the floor of each story so connected, and of sufficient length to permit access to the same from not less than two windows in each story; they shall be convenient of access from the interior of the building, commodious in size and form and of sufficient strength to be safe for the purpose of ascent and descent. In cities and villages where there is a water supply for fire purposes there shall be attached to such stairs or ladders a three-inch wrought-iron stand-pipe extending from a point within five feet of the ground to a point three feet above the roof or cornice; at each story above the first and on the roof there shall be attached a two and one-half inch angle hose valve with male hose connection, and a double or slamese "Y" female hose connection at the base of the pipe, with threads to conform to the size and pattern used by the fire department where the building is located. Neither this nor the next following sections shall apply to any private dwelling, nor to any building erected on or before the third day of May, 1895, and which is supplied with a reasonable fire escape or escapes.

ELEVATOR WALLS.

Section 1636f. The inside walls or casings of every elevator used for the conveyance of passengers to and from the upper stories of any such building as is within the preceding section will be constructed of fire-proof material throughout.

WATCHMAN; NOTICE OF MEANS OF EXIT.

Section 1636g. In all such buildings as are described in section 1636e which contain one hundred rooms or more not less than one efficient watchman shall be on duty from 10 o'clock p. m. until 5 o'clock a. m. during each and every night that any such building is occupied. There shall be posted in every room in every building within said section, in legible print, a brief and accurate statement of all the means of safety and escape therefrom in case of fire, and a red light shall be kept burning all night at the head of each stairway above the first floor, also on each floor above the first, at or near the exit to such fire-proof stairway or ladder.

ENFORCEMENT OF LAW.

Section 1636h. It shall be the duty of the chief or marshal of the fire department of every village or city to enforce the provisions of the foregoing sections, and of the state factory inspector to enforce them in towns, villages and cities where there is no such chief or marshal. Any person who shall fail to comply with the provisions of said sections within ninety days after being notified in writing to do so by either of said officers whose duty it may be to give notice shall be punished according to law. Said chief, marshal or inspector, upon receiving notice or obtaining knowledge that any person within his jurisdiction has not so complied with said provisions, shall file a written statement to that effect with the proper district attorney, which being done, he shall prosecute such person.

PENALTY.

Section 1636i. The owner, tenant or other person in charge of any building within either of the four next preceding sections who shall fail or neglect, after written notice has been given him in accordance with the next preceding section, to comply with any of the provisions of said sections which are applicable to the building owned, leased or in his charge shall be punished by a fine not exceeding one thousand dollars or by imprisonment in the county jail not longer than ninety days.

OVERCROWDING EMPLOYEES; SAFEGUARDS FOR MACHINERY, ETC.

Section 1636j. No person or corporation shall employ and put to work in any factory, workshop or other place where labor is performed, or in any part of

any such place, a larger number of persons than can be kept at work there without doing violence to the laws of health. The local board of health shall have power to determine any question arising under this provision, and its written determination shall be conclusive upon all parties to any action or proceeding under the same. The owner or manager of every place where persons are employed to perform labor shall surround every stationary vat, pan or other vessel into which molten metal or hot liquids are poured or kept with proper safeguards for the protection of his employes, and all belting, shafting, gearing, hoists, fly-wheels, elevators and drums therein which are so located as to be dangerous to employes in the discharge of their duty shall be securely guarded or fenced. Any person or corporation which shall neglect for thirty days after the receipt of written notice from the state factory inspector to provide a suitable place for the persons employed by him to work in or who shall fail to make and maintain such safeguards as this section requires and as said inspector shall specify, shall forfeit not to exceed twenty-five dollars for each offense, and every day's neglect or failure, after a conviction hereunder, shall constitute a separate offense.

DOORS, WHAT TO OPEN OUTWARDLY; FIRE-ESCAPES.

Section 4390. Any person or corporation, board of trustees, building committee, or other official person, board or body who shall erect or cause to be erected any theater, lecture room, hall, school-house, church, factory, hotel, court-house, town hall, city hall or opera house without providing the same with outer doors that swing or open outwardly, or who shall fail or neglect to provide any theater, lecture room, opera house, concert or other hall, school-house or hotel with fire-escapes as provided by law, shall be punished by fine of not less than one hundred dollars; and any architect who shall prepare plans for any building which is required by law to be provided with such doors or with fire-escapes, without providing in such plans for the same, shall be punished by fine of twenty-five dollars for the first offense and one hundred dollars for each subsequent offense.

FIRE ESCAPES ON FACTORIES, ETC.

Section 4390a. Every person or corporation owning, occupying or controlling any factory, workshop or structure three or more stories high, except such as are included in the next preceding section, in which twenty-five or more persons are employed at any kind of labor, shall provide and keep connected with the same one or more good and substantial metallic or fire-proof ladders, stairs or stairways, ready for use at all times, reaching from the cornice to the top of the first story, and placed on the outside thereof in such position and number as may be designated by the chief of the fire department or fire marshal of the city or village in which such structure is situated, or by the state factory inspector, and at each story above the first a wrought iron balcony in connection with such ladder, such balcony to be substantially attached to the structure, and of such length as to permit of access to it from two or more windows on each story, and of sufficient size to furnish reasonable means of escape to the persons employed therein from each and every floor or story above the first; and in all cities and villages where there is a water supply, either from water-works, fire engines or pumping station, there shall be attached to such fire-escape, except on structures equipped with automatic sprinklers, a three-inch wrought iron standpipe extending from a point within five feet from the ground to a point three feet above the roof or cornice, and on the roof shall be attached to a two and one-half inch angle hose valve, with male hose connection and a double or slamese "Y" female hose connection at the base of the pipe, the threads of which shall conform to the size and pattern used by the fire department where the structure is located. Any such person or corporation who shall fail, for three months after the receipt of notice in writing, stating the substance of the provisions of this section, from such chief, marshal or inspector to provide and keep such means of escape or such standpipe shall be punished by a fine not exceeding one hundred dollars.

EMPLOYMENT OF CHILDREN.

Section 4587a. Any person having the care, custody, control of any child under the age of fourteen years who shall exhibit, use or employ, or in any manner or under any pretense sell, apprentice, give away, let out or otherwise dispose of such child to any person for any obscene, indecent or immoral purpose, exhibition or practice, or for any business, exhibition or vocation injurious to the health or dangerous to the life or limb of such child, or who shall cause, procure or encourage any such child to engage therein, or any person who shall take, receive, hire, employ, use, exhibit or have in custody any such child for any such purpose shall be punished by imprisonment in the county jail not exceeding six months or by a fine of not more than one hundred dollars, or by both imprisonment and fine.

ACTS OF 1899.

CHILD LABOR.

CHAPTER 274.

AN ACT to regulate the employment of minors in the state of Wisconsin.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. No child under fourteen years of age shall be employed at any time in any factory or workshop or in or about any mine. No such child shall be employed in any mercantile establishment, laundry or in the telegraph, telephone or public messenger service, except during the vacation of the public schools in the town, district or city where such child is employed.

Section 2. It shall be the duty of every person, firm or corporation, agent or manager of any firm or corporation employing minors in any mercantile establishment, store, office, laundry, manufacturing establishment, factory or workshop or in the telegraph, telephone or public messenger service within this state to keep a register in said mercantile establishment, store, office, laundry, manufacturing establishment, factory or workshop in which said minors shall be employed or permitted or suffered to work, in which register shall be recorded the name, age, date of birth, place of residence of every child employed or permitted or suffered to work therein under the age of sixteen years and it shall be unlawful for any person, firm or corporation, agent or manager of any firm or corporation to hire or employ or to permit or suffer to work in any mercantile establishment, store, office, laundry, manufacturing establishment, factory or workshop, telegraph, telephone or public messenger service, any child under the age of sixteen years unless there is first provided and placed on file in such mercantile establishment, store, office, laundry, manufacturing establishment, factory or workshop an affidavit made by the parent stating the name, date and place of birth and name and place of the school attended of such child. If such child have no parent or guardian, then such affidavit shall be made by the child, and the register and affidavits herein provided for shall, on demand, be produced and shown for inspection to the factory inspector, assistant factory inspectors or any officer of the bureau of labor and industrial statistics.

Section 3. No person under the age of sixteen years shall be employed, required, permitted or suffered to work for wages at any gainful occupation longer than ten hours in any one day, nor more than six days in any one week, nor after the hour of nine at night nor before the hour of six in the morning.

Section 4. It shall be the duty of the commissioner of labor, the factory or assistant factory inspectors to enforce the provisions of this act, and to prosecute violations of the same before any court of competent jurisdiction in this state. It shall be the duty of the said commissioner of labor or the factory or assistant factory inspectors, and they are hereby authorized and empowered to visit and inspect, at all reasonable times, and as often as possible, all places covered by this act.

Section 5. The commissioner of labor, the factory or assistant factory inspectors shall have the power to demand a certificate of physical fitness, from some regularly licensed physician, in the case of children who may seem physically unable to perform the labor at which they may be employed, and no minor shall be employed who cannot obtain such a certificate.

Section 6. Whenever it appears upon due examination that the labor of any minor over twelve years of age, who would be debarred from employment under the provisions of section one of this act is necessary for the support of the family to which said child belongs or for its own support, the county judge of the county where said child resides, the commissioner of labor or any factory or assistant factory inspector may in the exercise of their discretion issue, free of charge, a permit or excuse authorizing the employment of such minor within such time or times as they may fix.

Section 7. No firm, person or corporation shall employ or permit any child under sixteen years of age to have the care, custody, management, or operation of any elevator.

Section 8. The words "manufacturing establishment," "factory" or "workshop" as used in this act, shall be construed to mean any place where goods or products are manufactured or repaired, dyed, cleaned or sorted, stored or packed, in whole or in part, for sale or for wages, and not for the personal use of the maker or his or her family or employer.

Section 9. Any person, firm or corporation, agent or manager of any corporation who, whether for himself or for such firm or corporation or by himself or through agents, servants, or foremen, shall violate or fail to comply with any of the provisions of this act or shall hinder or delay the commissioner of labor, the factory or assistant factory inspectors or any or either of them in the performance of their duty or refuse to admit or shut or lock them out from any place required to be inspected by this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not less than ten dollars nor more than one hundred dollars for each offense. Any corporation which, by its agents, officers or servants, shall violate or fail to comply with any of the provisions of this act shall be liable to the above penalties, which may be recovered against such corporations in an action for debt or assumpsit brought before any court of competent jurisdiction in this state.

Section 10. Any parent or guardian who suffers or permits a child to be employed or suffered or permitted to work in violation of this act shall be guilty of a misdemeanor and upon conviction thereof, shall be fined not less than five nor more than twenty-five dollars.

Section 11. All acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

Section 12. This act shall take effect and be in force, on and after its passage and publication.

Approved April 27, 1899.

SWEATSHOPS.

CHAPTER 232.

AN ACT to provide for the preservation of public health.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. No dwelling or building, or any room or apartment of itself, in, or connected with any tenement or dwelling or other building, shall be used except by the immediate members of the family living therein, for carrying on any process of making any kind of wearing apparel or goods for male or female wear, use, or adornment, or for the manufacture of cigars, cigarettes, or tobacco goods in any form, when such wearing apparel or other goods are to be exposed for sale, or to be sold by manufacturer, wholesalers or jobber, to the trade or by retail, unless such room or apartment shall have been made to conform to the requirements and regulations provided for in this act.

Section 2. Each such room or apartment used for the purposes aforesaid, shall be regarded as a workshop or factory, and shall be separate from and

have no door, window or other opening into any living or sleeping room of any tenement or dwelling, and no such workshop or factory shall be used at any time for living or sleeping purposes, and shall contain no bed, bedding, cooking or other utensils, except what is required to carry on the work therein, and every such shop or factory shall have an entrance from the outside direct, and if above the first floor, shall have a separate and distinct stairway leading thereto, and every such workshop or factory, shall be well and sufficiently lighted, heated and ventilated by ordinary, or, if necessary, by mechanical appliance, and shall provide for each person employed therein, no less than two hundred and fifty cubic feet of air space in day time and four hundred cubic feet at night, and shall have suitable closet arrangements for each sex employed therein, as follows: Where there are ten or more persons, and three or more to the number of twenty, are of either sex, a separate and distinct water closet, either inside the building, with adequate plumbing connections, or on the outside at least twenty feet from the building, shall be provided for each sex; when the number employed is more than twenty-five of either sex, there shall be provided an additional water closet for such sex up to the number of fifty persons, and above that number in the same ratio, and all such closets shall be kept strictly and exclusively for the use of the employes and employer or employers of such workshop or factory: provided that where more than one room is used under the direction of one employer, all such rooms are to be regarded as one shop, or factory, and every such workshop or factory shall be kept in a clean and wholesome condition, all stairways and the premises within a radius of thirty feet, shall be kept clean, and closets shall be regularly disinfected and supplied with disinfectants, and the commissioner of labor and factory inspectors may require all necessary changes, or any process of cleaning, painting or whitewashing which they may deem essential to assure absolute freedom from obnoxious odor, filth, vermin, decaying matters or any condition liable to impair health or breed infectious or contagious diseases; he shall prevent the operation of such shops or factories that do not conform to the provisions of this act, and cause the arrest and prosecution of the person or persons operating the same.

Section 3. No person, for himself or for any other person, firm or corporation shall give out work or contract with, any other person to perform such work necessary to make such goods mentioned in section one, after having received notice from the commissioner of labor or factory inspectors that said latter person has not complied with the provisions of section two of this act, which notice shall remain in force, until said person has complied with this law, of which notice must be given to the employer by the commissioner of labor or the factory inspectors.

Section 4. Every such person, firm or corporation heretofore mentioned, shall obtain and keep a record of all persons to whom work is given out or contracted for, including their names and addresses, which record shall be opened to inspection of the commissioner of labor or the factory inspectors when called for.

Section 5. No person, firm or corporation shall receive, handle or convey to others, or sell, hold in stock or expose for sale, any goods mentioned in section 1, unless made under the sanitary conditions provided for and prescribed in this act: but this act shall not include the making of garments or other goods, by any person for another by personal order: and when received for wear or use direct from the maker's hands, and all violations of the provisions of this act, shall be prosecuted by any of the factory inspectors with the advice and consent of the commissioner of labor.

Section 6. Any person, firm or corporation who shall violate any of the provisions of this act, shall upon conviction thereof, be fined in any sum not less than fifty dollars, nor more than one hundred dollars for each offense, or imprisoned not less than thirty, nor more than sixty days, or both: and in all prosecutions brought by or under the direction of the commissioner of labor for the violation of this act, he shall not be held to give security for costs, or adjudged to pay any costs, but in all cases where the accused be acquitted, or is found to be indigent, the costs shall be paid out of the county

treasury of the county in which the proceedings are brought, the same as the costs in all other cases of misdemeanor.

Section 7. This act shall take effect and be in force, from and after its passage and publication.

Approved April 20, 1899.

SEATS FOR FEMALES:

CHAPTER 77.

AN ACT requiring employers of females in any manufacturing, mechanical or mercantile establishment to furnish seats for the use of such females when not on active duty.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. Every person or corporation employing females in any manufacturing, mechanical or mercantile establishment in the state of Wisconsin shall provide suitable seats for the females so employed, and shall permit the use of such seats by them when they are not necessarily engaged in the active duties for which they are employed.

Section 2. Any person or corporation who shall violate the provisions of this act shall, upon conviction thereof, be considered guilty of a misdemeanor and shall be punishable by a fine of not less than ten dollars nor more than thirty dollars for each and every offense.

Section 3. This act shall take effect and be in force, from and after its passage and publication.

Approved March 30, 1899.

CHAPTER 158.

AN ACT relating to the duties of factory inspectors and amendatory of section 1021f of the statutes of 1898.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. Section 1021f of the statutes of 1898, is hereby amended by inserting the words "mercantile establishment" after the word "factory," and the words "or women" after the word "laborers" in the third line of said section; the words "or for suitable seats for women" after the word "operatives" in the sixth line of said section; the words "such seats for women" after the word "employees" in the ninth line of said section and the words "mercantile establishment" after the word "factory" in the tenth and twelfth lines of said section so that said section so amended shall read as follows:

Section 1021f. The commissioner, his deputy, the factory inspector and the assistant factory inspector may enter any factory, mercantile establishment or workshop in which laborers or women are employed, for the purpose of obtaining facts and statistics, examining the means of escape therefrom in case of fire and the provisions made for the health and safety of operatives or for suitable seats for women therein. If any such officer shall learn of any violation of or neglect to comply with the law in respect to the employment of children, the hours of labor for them or for women, or in reference to fire escapes or the safety of employees, or such seats for women, he shall give written notice to the owner or occupant of such factory, mercantile establishment or workshop, of such offense or neglect, and if the same is not remedied within thirty days after the service of such notice, such officer shall give the district attorney of the county in which such factory, mercantile establishment or workshop is situated, formal notice of the facts, whereupon that officer shall immediately institute the proper proceedings against the person guilty of such offense or neglect.

Section 2. This act shall take effect and be in force, from and after its passage and publication.

Approved April 12, 1899.

EMERY WHEELS, ETC.

CHAPTER 189.

AN ACT regulating the operation and use of emery wheels or emery belts of all kinds in factories or workshops, and prescribing a penalty for the violation thereof.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. That all persons, companies or corporations operating any factory or workshop where emery wheels or emery belts of any description are used for polishing, either solid emery, leather, leather covered, felt, canvas, linen, paper, cotton, or wheels or belts rolled or coated with emery or corundum, or cotton wheels used as buffs, shall, when deemed necessary, by the factory inspector, assistant factory inspector, or any officers of the bureau of labor, provide such polishing wheels or belts with blowers or similar apparatus, which shall be placed, over, beside or under such wheels or belts in such manner as to protect the person or persons using the same from the particles of the dust produced and caused thereby, and to carry away the dust arising from or thrown off by such wheels or belts while in operation, directly to the outside of the building or to some receptacle placed so as to receive and confine such dust. Provided, that grinding machines upon which water is used at the point of grinding contact shall be exempt from the provisions of this act; and provided that this act shall apply only to those wheels or belts which are used for polishing and which are contained in the room or apartment usually denominated the polishing room, and which are used continuously therein; and provided further, that this act shall not embrace nor apply to such wheels or belts as cannot be so equipped without impairing the convenient or necessary use thereof.

Section 2. No emery wheels or grindstone in any factory, mill or workshop, shall be used when the same is known to the person using the same to be cracked or otherwise defective, nor operated at a greater speed than indicated or guaranteed by the manufacturer of such emery wheel or grindstone.

Section 3. It shall be the duty of any person, company or corporation operating any such factory or workshop to provide or construct such appliances, apparatus, machinery or other things necessary to carry out the purpose of this act, as set forth in the preceding section, as follows: each and every such wheel shall be fitted with a sheet or cast iron hood or hopper, of such form and so applied to such wheel or wheels that the dust or refuse therefrom will fall from such wheels, or will be thrown into such hood or hopper by centrifugal force, and be carried off by the current of air into a suction pipe attached to same hood or hopper.

Section 4. Each and every such wheel six inches or less in diameter shall be provided with a three-inch suction pipe; wheels six inches to twenty-four inches in diameter, with four-inch suction pipe; wheels from twenty-four inches to thirty-six inches in diameter, with five-inch suction pipe; and all wheels larger in diameter than those stated above shall be provided each with a suction pipe not less than six inches in diameter. The suction pipe from each wheel, so specified, must be full size as to the main trunk suction pipe, and the main suction pipe to which smaller pipes are attached shall, in its diameter and capacity, be equal to the combined area of such smaller pipes attached to the same, and the discharge pipe from the exhaust fan connected with such suction pipe or pipes shall be as large, or larger than the suction pipe.

Section 5. It shall be the duty of any person, company or corporation operating any such factory or workshop to provide the necessary fans or blowers to be connected with such pipe or pipes, as above set forth, which shall be run at a rate of speed as will produce a velocity of air in such suction or discharge pipes of sufficient force to carry away all dust discharged into the aforesaid hood or hopper. All branch pipes must enter the main trunk pipe at any angle of forty-five degrees or less; the main suction or trunk pipe shall

be below the emery or buffing wheels, and as close to the same as possible, and to be either upon the floor or underneath the floor on which the machines are placed to which such wheels are attached. All bends, turns, and elbows in each such pipes must be made with easy, smooth surfaces, having a radius in the throat of not less than two diameters of the pipe on which they are connected.

Section 6. The provisions of sections 4 and 5 shall not apply to existing mills, factories or workshops which, at the time of the passage of this act, have an appliance or appliances designed and used for the purpose of removing such dust from the polishing room, and which said appliance or appliances substantially effect such design.

Section 7. It shall be the duty of every factory inspector of this state, or his deputies to enter any factory or workshop in this state during working hours, and upon ascertaining the facts that the proprietors or managers of such factory or workshops have failed to comply with the provisions of this act, to make complaint of the same in writing before a justice of the peace or police magistrate having jurisdiction, who shall thereupon issue his warrant, directed to the owner, manager or director, in such factory or workshop, who shall be thereupon proceeded against for the violation of this act as herein-after mentioned, and it is made the duty of the prosecuting attorney to prosecute all cases under this act.

Section 8. Any such person or persons or company, or managers, superintendents or directors of any such company or corporation, who shall have the charge or management of such factory or workshop, who shall fail to comply with the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof before any court of competent jurisdiction shall be punished by a fine of not less than twenty-five dollars, and not exceeding one hundred dollars.

Section 9. This act shall take effect and be in force from and after its passage and publication.

Approved April 14, 1899.

MANUFACTURE OF CIGARS.

CHAPTER 79.

AN ACT regulating the manufacture of cigars.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. No shop or place wherein cigars are manufactured shall be located below the ground floor.

Section 2. Each employee in any shop or place wherein cigars are manufactured, shall, while actually employed, be allowed to use twenty square feet of surface space, unobstructed to the ceiling.

Section 3. Every room wherein cigars are manufactured shall contain at least seven hundred cubic feet of air space. It shall in every part be not less than eight feet in height, from floor to ceiling, every window shall have not less than twelve square feet in superficial area, and the entire area of window surface shall not be less than twelve per cent. of the floor space of such room.

Section 4. Every room in which cigars are manufactured while work is carried on shall be so ventilated that the air shall not become impure and injurious to the health of the persons employed therein, and it shall wherever necessary, by the means of air shafts or other ventilation, be so changed as to render harmless all gases, dust and other impurities generated in the process of manufacturing cigars. All windows are to be kept open for thirty minutes before working hours and for thirty minutes after working hours.

Section 5. Every such shop or place in which one or more persons are employed and every such factory in which five or more persons are employed, shall be kept clean. The dust must be removed from work tables and floors once every day, the floors scrubbed at least once a week and one cuspidor provided for every two employees.

Section 6. No person under eighteen years of age shall be employed or permitted to work in a cigar shop or a cigar factory at manufacturing cigars for longer than eight hours a day or forty-eight hours a week.

Section 7. Where men and women are employed there shall be separate dressing rooms and water closets for the different sexes.

Section 8. Any person violating any provisions of this act shall be punished by fine not exceeding twenty-five dollars and no less than ten dollars for the first offense, and by fine not exceeding fifty dollars and no less than twenty-five dollars for the second and each following offense.

Section 9. The factory inspector shall have full power and it shall be his duty to enforce all the provisions of this act, but no prosecution shall be instituted for any violation of sections 2, 3 and 4 unless the employer or manufacturer, or the firm has been notified by a notice sent in a registered letter for at least four weeks prior to a prosecution, requiring the necessary changes in the factory workshop, and such request has not been complied with.

Section 10. All acts or parts of act inconsistent with the provisions of this act are hereby repealed.

Section 11. The provisions of this act shall take effect on and after the first day of July, 1900.

Approved March 30, 1899.

FIRE ESCAPE LAW.

The fire-escape law is one which is universal. It is found upon the statute books in nearly every state. A few adjudicated decisions might here be noted.

McLaughlin vs. Armfield, 65 Hun. (N. Y.), 376: This was an action for damages for injuries received by the plaintiff in jumping from a building which was not provided with fire escapes as required by law. The court held "under a statute directing that any building occupied, or built to be occupied as a factory shall be provided with such fire escapes and doors as shall be directed and approved by the commissioners.

The duty rests upon the owner to bring the subject before the commissioner and obtain his direction in the premises and where an accident occurs because of the absence of such fire escapes from the building, the owner cannot avoid responsibility by alleging that the statute does not declare absolutely that the fire escapes shall be erected by the owner but only such fire escapes and doors as shall be directed and approved by the commissioners shall be erected, or by alleging that he had no personal knowledge that the fire escapes were not erected as required by law. It is his duty as a matter of law to erect such fire escapes."

Wiley vs. Mulledy, 78 N. Y., 310: The statute requires

tenement houses to provide such fire escapes as shall be directed and approved by certain commissioners. The defendant failed to provide the building with the same. Held, "That duty is presently imperative, and owner must procure such direction and approval, without waiting for the action of the commissioners."

Wesley City vs. Healy, 84, Ill., 126: Where owner failed to place in a fire escape in mine whereby one of the servants was killed by falling into a shaft. Held, "The company is liable for not complying with the statute."

Schott vs. Harvey, 105 Pennsylvania St., 222: The provision of the act of June 11, 1897 (P. L. 128). "That certain factories, etc., shall be provided with fire escapes by the "owners" or other persons therein designated, does not apply to an owner in fee not in possession who has leased the premises to a tenant who occupies the same as such factory. Such tenant in possession using the premises as such a factory is the "owner" of the factory within the meaning of said act, and is liable for not complying with the law."

Fire Department of City of New York vs. Chapman, 10 Dally, 377: Under laws 1871, chapter 625, section 28, as amended by laws 1874, chapter 547, enacting that certain buildings therein described "shall be provided with such fire escapes, alarms and doors as shall be directed by the Superintendent of Buildings." An owner of such buildings although he has once provided them with fire escapes in compliance with the direction of that officer may subsequently be required to provide additional fire escapes therefor.

Other cases: Johnson vs. Steam Co., 55 N. Y. Rep., 133; Grant vs. Slater Co., 14 R. L., 308; City of N. Y. vs. Field, 42 N. Y. Supp., 691; Keeley vs. O'Connor, 106 Penn., 321.

SAFEGUARDS FOR MACHINERY.

It is also very important that the law on emery wheels and safeguards for machinery shall be observed.

In the case of Thompson vs. Allis Co., 98 Wis., 523: "Plaintiff while employed in defendant's machine shops as a helper on a boring machine was injured by having his sleeve

caught and his arm drawn between an uncovered cog wheel which constituted a part of the gearing of said machine. Held, That the machine was not securely guarded or fenced as provided by the statute, so as to be safe for persons operating the same."

Cayzer vs. Taylor, 10 Gray (Mass.), 274: "In an action by a servant against his master for injuries received from the explosion of a steam boiler used in his business, the plaintiff introduced evidence without objection that there was no such fusible safety plug on the boiler, as was required by statute. Held, The plaintiff could recover, even under the showing of the defendant that the custom among engineers was not to use such a plug. The statute must be strictly complied with."

Durant vs. Lexington Coal Mining Co., 97 Mo., 62: The statute of Missouri provided that the owner of mines should provide a fence and gate at the top of every shaft and entrance to every intermediate working vein, also a cage covered with boiler iron to keep safe, as far as possible, persons descending into and ascending out of said shaft: Held, When an employe was injured, even knowing that the cage and gates were not protected according to statute, he could recover."

The Litchfield Coal Co. vs. Taylor, 81 Ill., 590: "Where a party is killed on attempting to ascend from a coal mine, by the fall of a lump of coal, and it appears that the defendant willfully used uncovered cages for the ascent and descent of persons working in the mine in violation of the statute which caused the death, a recovery may be had by his widow notwithstanding the deceased may not have been free from fault and negligence on his part.

Samuel McRichard vs. Flint, 114 N. Y., 222: "The omission of an owner of a building in the city of New York used for business purposes, in which there is a hoisting elevator, to comply with the requirements of the statute of 1874 (chapter 517, laws of 1874), requiring that the openings in each floor shall be protected by such a substantial railing and trap doors to close the same as shall be approved by the superintendent of buildings and that such trap doors shall be closed at all times except when in actual use, is prima facie evidence of negligence, in an action by one lawfully upon the premises who has

sustained injury in consequence of a failure to comply with the statute."

State vs. Murlin, 383 W., 923: "An act providing that all dry and dusty coal mines discharging light carbonated hydrogen gas, or mines where the coal is blasted off from a solid, shot fires must be employed to fire all shots after the other employes have retired, and subjecting the owner or agent to fine and imprisonment for violaton of the act, is a reasonable exercise of police power."

Quackenbush vs. Wis. Minn. R. R. Co., 62 Wis., 411: "A statute imposing an absolute liability for injuries resulting from a failure to fence a railroad, and excluding the defense of contributory negligence is within the police power of the state and is constitutional.

An employe of a railroad company knowing of the fact that the road is unfenced does not thereby waive his right to recover for injuries caused by the want of a fence."

Other cases: Guinard vs. Stout Co., 95 Wis., 482; Thompson vs. Johnston Bros. Co., 86 Wis., 576; Jetter vs. N. Y. & Harlin R. R. Co., 2 abb., ct., appgs., Dec., 458; 2 Keyes, 154; Comm. vs. Bonnell, 8 Phila., 534.

SEAT LAW.

The importance and necessity of the seat law must be everywhere conceded. As a health law for women who work in any manufacturing, mechanical or mercantile establishments it is unquestionably a necessary one. It is but reasonable that women when not on active duty in these various establishments, considering their station and status in life, should be provided with seats. That this law must be strictly enforced needs no further explanation.

Parker and Worthington on Public Health and Safety, Sec. 260, says: "The state may forbid certain classes of persons from being employed in occupations which their age, sex, health, etc., renders unsuitable for them, as women and young children are sometimes forbidden from being employed in certain kinds of factories and mines, and statutes are perfectly valid which provide that women or minors shall not be employed in laboring

by any person in any manufacturing establishment more than a certain number of hours in any one day, etc. Of such laws it has been said that they do not violate any constitutional rights."

Cooley on Constitutional Limitations, page 745, after reviewing the subject of laws interfering with the liberty of contract, says: "But ere, as elsewhere, it is proper to recognize distinctions that exist in the nature of things, and under some circumstances to prohibit employments to some one class, while leaving them open to others. Some employments, for example, may be admissible for males and improper for females and regulations recognizing the impropriety and forbidding women to engage in them would be open to no reasonable objection."

State vs. Considine, 83 Federal Rep., 157: The question in this case was whether a woman considering her station in life could be prohibited from employment, in any saloon, beer hall, barroom, theatre or other places of amusement where intoxicating liquors are sold. The case was argued both as a health and moral law and the defense made was that the law was unconstitutional as in contravention of the provisions of the fourteenth amendment to the constitution of the United States that it deprives persons lawfully engaged in the liquor business of the privilege or right of employing women who are competent to contract with reference to their own services and in this that it deprives women of freedom in their choice of vocations and makes it unlawful for them to engage in employment which is lawful to men. The court held, "that this statute is general in its scope and applies equally to all persons, similarly situated; it is not, therefore, in any sense partial or arbitrary. It was not enacted to do injury or work injustice. The law is a proper police regulation and clearly within the police power of the state, which has not been taken away by the fourteenth amendment."

Commonwealth vs. Hamilton Mfg. Co., 120 Mass., 383: The question before the court in this case was whether the law providing that no woman * * * shall be employed in laboring by any person, firm or corporation in any manufacturing establishment in this commonwealth more than ten hours a day or sixty hours a week was a proper police regulation. The court held, "It does not forbid any person, firm or corporation

from employing as many persons or as much labor as such person, firm or corporation may desire nor does it forbid any person to work as many hours a day or week as he chooses; it simply provides that in any employment which the legislature has evidently deemed to some extent dangerous to health, no person shall be engaged in labor more than ten hours a day or sixty hours a week. There can be no doubt that such legislation can be maintained, either as a health or police regulation, if it were necessary to resort to either of those sources for power. The principle has been so frequently recognized in this commonwealth that reference to the decision is unnecessary."

Other cases: Commonwealth vs. Bonnell, 8 Phil., 534; People vs. Ewer, 141 N. Y., 127; Bradwell vs. State, 16 Wal., 130-142; Foster vs. Board of Police Commission, 37 Pac., 763; Smith vs. Keating, 38 Cal., 702; Geozza vs. Giermann, 148 U. S., 657; State vs. Considine, 16 Wash., 358.

For a further discussion of the principle involved see the various decisions cited in the article on the child labor law, page 385, of the child labor report.

SWEATSHOPS AND CIGAR AND SANITARY LAWS.

We will notice that some of our factory laws were enacted for the purpose of giving to the public and individuals such sanitary needs as are necessary to promote all that is beneficial to health and life of society. One of the elements which goes to make up the strength of a nation is, that its members be strong, healthy and robust. Such members are not found in the unwholesome rooms of a factory nor in the filthy departments of a sweatshop. Under such conditons, by no means can there circulate in the body of the laborer, the purity of blood and strength, but in the reverse he is made the victim of disease and a helpless factor of the state. Why should hundreds of men, women and children work and sleep in these unwholesome rooms when they might with a little care be made wholesome? Why must groups of men be crowded into small departments and forced to work for twelve long hours, where ventilation is very little or none?

The many evils which exist in the factory or workshop could be greatly remedied by the manufacturer, were his interests as great in the health and life of his employe as the work and profit which is to be gained from him. The first object of the employer is the labor of his employe. His health and life, under the conditons which he works, is but a secondary consideration to him. It therefore devolves itself upon the state to see that such laws and sanitary measures are enforced which are beneficial to the health and life of its laborers.

The sweatshop law is one of very great importance although the conditions are not so alarming in this state as in many of the eastern states; yet to remedy some of the existing evils which have crept in and to be well protected for the future, our legislature has deemed it wise to pass a law known as the sweatshop law. The "sweating system" is one which preceded the factory system. Long before the invention of machinery we could find in the little houses busy hands of the family working and manufacturing whatever was necessary for family use and livelihood. When factories and machinery sprang into existence the work of the house factory ceased, but in the tailoring trades the practice of sending out garments ready cut, to be made by journeymen at their houses and at a price per garment, has survived and is still maintained in custom work, in which the journeyman is still a skilled tailor who makes the whole garment. The odious but expressive name "sweating" has been attached to the business because of its evil nature and consequences. "In its worst form, and there are doubtless degrees in its development, it is simply extortion practiced upon people whose environment prevents their escape from it; in other words it is a deliberate preying upon the necessities of the poor." In its economical aspect it is the culmination and final fruit of the competitive system in industry.

The practice of this system is greatly found in England, Germany and Switzerland. In England it has been the subject of legislation for nearly a century. In Germany the miseries of the sweater's victims have haunted the toy makers and the meerschaum cutters for generations. In Berlin the hardships of the sewing women have been a subject of official investigation

since 1863 and the conditions disclosed have closely resembled those in London, New York, Boston and Chicago. In Switzerland the federal government has repeatedly intervened with restrictions which it makes more stringent from time to time, upon the hours and conditions within which women may work, in their own homes at embroidering, under the sweating system.

In our country this great evil is found in the larger cities. The sanitary conditions of the many homes of the poor classes where this work is carried on is beyond description. It is astonishing to see the men, women and children work in a single room upon filthy floors and vermin infested beds to the very latest hours of night and then sleep without ventilation in that same room. In several districts of Chicago in 1892 there were found 1,836 places where sweatshop work was carried on. In Boston and New York the conditions were even worse.

It is needless to suggest that the sweatshop districts are the natural abodes of disease and the breeding places of infection and epidemics. It means the general impairment of health in both sexes. "In men the debility takes the form of consumption and of complete exhaustion and premature old age; the girls become victims of consumption, dyspepsia and life-long pelvic disorders. These are the results of the over-exertion, bad housing, under nourishment and noxious surroundings common to their calling and condition in life. But in addition to these disabilities they are constantly exposed to the inroads of typhoid and scarlet fevers, and other zymotic diseases."

It is very interesting in this connection to read the report of the committee on the sweating system before the 52nd congress, second session (report No. 2,300). This committee made it their object and purpose to investigate a greater part of the tenement houses and sweatshops of the various large cities in the union. In an inspection made in Boston by Chairman John DeWitt Warner, with Messrs. E. B. Taylor and Sherman Hoar, Inspector Griffin and Agent John Crowley of the Anti-Tenement House League, we find the following report:

"At the first place which we visited, we found a man and his wife and eight children living in two rooms, each 12 by 12 where they ate, slept, cooked and worked at making children's pants, the new materials cut and sorted for which were found

piled upon the bed in the inside room. The two rooms, while they showed every sign of poverty and crowding, were not particularly unclean, the inspector noting that they were better than a few days since, when he had warned them. There were no conveniences for closets, etc., except those in common with others on the same alley, filthy and nauseating beyond description and showing no regard to decency, let alone comfort or cleanliness.

Right across the alley there was visited the second place which the inspector now discovered for the first time. In two rooms about the same width, but each a little longer than those just visited was found a man and his wife and four children with several boarders or guests, the latter lying about in a way to indicate that they were decidedly at home. Here clothing was being manufactured, and upon the three beds were piled the goods, cut, ready to be made up. The stench and filth of these rooms were such as to make it impossible for members of the committee to remain in them, while the closet arrangements outside was simply a mass of filth.

The next visit was to a place where a man and his wife, three children and a girl cousin, and two employes lived, ate and slept in a place 18 by 20 feet, divided into three irregular rooms. Here cooking, eating, sleeping and working were being carried on in the same room and the materials and finished goods were piled upon the beds and the tables where the food lay. Here filth was such as to be nauseating and the committee could hardly complete its inspection."

The following are a few reports taken from New York City :

"We went to Delancey street and inspected a few places. On the second floor of a house there was found a small sweatshop, where the wife was doing the family washing in the workroom, and only the husband and one hand employed, though they explained that they had the room full when they were all at work, but that the others had gone home. Ordinarily dirty and confused.

In the next shop we found twenty at work in a rear building. They had just completed piling the unfinished clothes into beds for the night. The premises were very disordered and dirty.

We next went to Essex street. In a rear house we found

a family at work pressing knee pants indiscriminately with eating and sleeping, the work being scattered about the premises and on the table with the food, while young children swarmed over everything."

Let us look at some of the extreme cases as found in Chicago:

"In a tenement house a man was found just recovering from malignant diphtheria, while in the room adjoining on the same floor and in the room above, knee pants were being finished and the work had not been suspended during any stage of the disease.

Another place we found two children with a loathsome skin disease sewing buttons on knee pants. The mother, to show how bad the case was, passed her hand over their faces, brushing the scales upon the clothing.

In another place we found a mother working on silk-faced summer jackets for ladies. In the same room was a sick child with scarlet fever."

The committee reports that in all these places and in hundreds of others the utmost squalor and filth prevailed with an absolute negation of every sanitary provision or precaution.

It seems to me that the above extracts give us an idea as to the prevailing evil which exists under the sweating system in large cities. Though the conditions have been somewhat improved because of the more stringent laws and rigid enforcement thereof, yet the evil still prevails in many states. Wisconsin has been very fortunate in not finding this evil a prevailing one. The cases found throughout its various cities have been very moderate and with our efficient code of laws we shall lose no opportunity in promoting its strict enforcement. It has been the great object of our legislatures and courts to improve the conditions and surroundings of the people to a better sanitary state. The legislature, through its efficient police power, has passed many laws which are for the health, life and morals of the people. The courts in all cases have upheld such laws as for the best interests of society.

Public health ought not to be impaired when mere caution on the part of a few can remedy such impairment. A whole community might become the victims of disease by the distribution of food, cloth, tobacco, etc., because the article is manufactured in or about surroundings where dirt, filth and disease

prevail. For the welfare of the public as well as for the individual the manufactured article must be made in a pure, healthy manner.

Wherever this evil predominates the courts will not fail in enforcing the laws which seek to remedy it. The authorities which uphold the health and sanitary laws are very numerous though we have no adjudicated cases bearing directly on the sweatshops or cigar law, yet the same principle is involved in many of the health law cases.

Egan vs. Health Dept. of City of New York, 45 N. Y. S., 325: The plaintiff is the owner of a tenement house situated on the rear portion of the premises No. 55 James street, and in this action seeks to enjoin the health department from executing an order which it has made requiring the tenants to vacate the premises, and prohibiting the further use of the same as a human habitation without a written permit from the board of health. The order recites that the sanitary superintendent, one of the defendant's officers, has certified to the board that the building in question is unfit and not reasonably capable of being made fit for human habitation by reason of want of proper ventilation, and by reason of want of repair and defects in the drainage and plumbing and because of the existence of a nuisance on the premises which is likely to cause sickness among its occupants and that the occupancy of said building is dangerous to life and detrimental to health. The tenement house was ordered to be vacated without notice to the owner. Held, "As a health provision the board of health may order a tenement house to be vacated because of its unsanitary condition without notice to the owner."

Barber vs. Connolly, 113 N. S., 27: An ordinance was passed in San Francisco requiring all laundries to have proper drainage and sanitary appliances and no person shall be engaged or permitted to be about a laundry who suffers from an infectious or contagious disease and that for a violation of this ordinance one would be guilty of a misdemeanor.

The case went to the U. S. Supreme Court and it was there held that such a regulation was proper and purely a police regulation within the competency of a municipality possessed of ordinary powers.

Lake Shore & M. S. R. R. Co. vs. State of Ohio, 173 U. S.,

285: "The power of the states to regulate matters of internal police within their limits applies not only to the health, morals and safety of the public, but also to whatever promotes the public peace, comfort and convenience."

City of Newton vs. Joyce, 44 N. E., 116: Statute of 1891, ch. 220, Massachusetts, prohibiting any person from maintaining a stable for more than four horses without a license from the city board of health, though it provides no compensation to the owner and makes the decision of the board final, is a valid exercise of police power.

Commonwealth vs. Bonnell, 8 Phila., 534: This action was brought to enforce a statute which provided that for the health and safety of persons employed in coal mines proper ventilation * * * * should be had.

The owners of the mine refused to comply with the provisions of the statute on the ground that it was unconstitutional. The court held that it was a proper health regulation within the police power of the state and constitutional. The court held that it was a proper health regulation within the police power of the state and constitutional.

Ex parte White, 67 Cal., 102: As a health regulation, the board of supervisors of the city of San Francisco prescribed the manner in which buildings used as laundries shall be constructed. The act was held constitutional.

Eben Johnson vs. Sumonton, 43 Cal., 242: Health regulation: The statute of April 25th, 1863, conferring authority upon the supervisors of San Francisco "to make all regulations which may be necessary or expedient for the preservation of the public health, is within the constitutional power of the legislature to enact."

Beer Co. vs. Mass., 97 U. S., 25: "All rights are held subject to the police of a state, and if the public safety or public morals require discontinuance of any manufacture or traffic, the legislature may provide for its discontinuance, notwithstanding individuals or corporations may thereby suffer inconvenience.

The police power extends to the protection of the lives, health and property of citizens and the promotion of good order and good morals."

Taunton vs. Taylor, 116 Mass., 254: "A statute forbidding

the exercise within the limits of a city of any trade which is a nuisance or hurtful to the inhabitants, or dangerous to the public health, or the exercise of which is attended by noisesome or injurious odors, or is otherwise detrimental to their estates is valid and constitutional.

Fertilizing Co. vs. Hyde Park, 97 U. S., 663: A statute was passed in Illinois giving the village authorities power to define or abate nuisances injurious to the public health and to regulate, prohibit or license certain named trades or callings and "all establishments or places where nauseous, offensive or unwholesome business was carried on." It appeared that the company's factory was an unendurable nuisance to the inhabitants for many miles round its location, that the stench was intolerable, producing nausea and discomfort, if not sickness to the people. The transportation of the putrid animal matter by the company through the streets of Hyde Park was offensive in a high degree both to sight and smell."

The court held that the state under its power to protect the public health could abate the nuisance created by the company's factory, and prohibit business which is injurious to life, comfort and health.

Green vs. Mayor of Savannah, 6 Ga., 1: A city ordinance declaring that the cultivation of rice within the corporate limits of the city is injurious to the health of its citizens and providing for the removal and destruction of the growing crops of rice within the corporate limits of the city as a nuisance is valid and binding as a police regulation and constitutional.

State of Utah vs. Holden, 14 Utah, 71: "The legislature shall pass laws providing for the health and safety of employes in factories. The court will not hold the act without such constitutional authority if there is any reasonable doubt that it is not calculated to promote the health and safety of such employes."

Other cases: *Powell vs. Pennsylvania*, 112 U. S. 678; *State vs. Schlemmer* (La.), 8 S. Rep., 307; *Sohier vs. Trinity church*, 109 Mass., 22; *Miller vs. Craig*, 3 Stock (N. J.), 175; *Rae vs. Flint*, 51 Mich., 526; *Cartwright vs. Board of Health*, 56 N. Y. S., 731; *Board of Health vs. Henzler*, 41 A., 228; *City of Dallas vs. Allen*, 40 S. W., 324; *Mun. vs. Corbin*, 44 P., 783; *Council of Charleston vs. Werner*, 24 S. E., 207; *Common-*

wealth vs. Zacharias, 5 Pa. Dist. R., 475; Beiling vs. City of Evansville, 42 N. E., 621; Rafferty vs. Haddock, 6 Pa. Dist. R., 667; Hawke vs. Brown, 50 N. Y. S., 1032; Health Department vs. Dyest, 47 N. Y. S., 641; Rhodes vs. Dunbar, 7 Sm., 275; Commonwealth vs. Hamilton Mfg. Co., 120 Mass., 383; People vs. Ewer, 41 N. Y., 127; The Slaughter Cases, 16 Wal., 36.

Parker and Worthington, on Public Health and Safety, says, Sec. 250:

"The exercise and enjoyment of all rights are subject to such reasonable conditions as may be deemed by the governing authority essential to health, safety and morals of the community. It is therefore regarded as beyond dispute that the state in the exercise of its police power may subject all occupations to such degree of regulations as may fairly be required for the protection of health and for the promotion of the public welfare."

Pleumley vs. Mass., 155 U. S., 461: "The judiciary of the United States should not strike down a legislative enactment of a state, especially if it has direct connection with the social order, the health and the morals of its people, unless such legislation plainly and palpably violates some right granted or secured by the national constitution, or encroaches upon the authority delegated to the United States for the attainment of objects of national concern."

The sweatshop and cigar law does not violate any constitutional provision. It does not deprive any person of his property. It does not take away property. It merely regulates its use and is purely a health law. Cooper vs. Schultz, 32 How., 107; Coe vs. Schultz, 47 Barb., 64; Cooley on Const. Lim. (5 ed.), 707; 1 Potters Dwaris on Statute, 463; Dill on Mun. Corp., 93; Sedg. on Const. Law, 423; State vs. Blake, 36 N. J. L., 442; Bertholf vs. O'Reilly, 74 N. Y., 521; People vs. Mayor, etc., 4 Const., 419; Met. Bd. of Excise vs. Barrie, 34 N. Y., 657.

The court will not declare a law unconstitutional, unless upon its face it is plainly and clearly in derogation of constitutional limitations. West Penn. Inst. vs. Edgwood R. R. Co., 79 Penn., 257; S. R. R. Co. vs. Stockton, 41 Cal., 147; Bloomfield vs. Richardson, 63 Barb., 437; Pittsburg vs. Scott, 1 Penn. St., 309; Ex parte Smith vs. Keating, 38 Cal., 702; St. Paul vs. Colters, 12 Minn., 41; St. Louis vs. Weber, 44 Mo., 547; Paxon vs.

Sweet, 1 Green (N. J.), 196; Bunkmayer vs. Evansville, 29 Ind., 187; Brewster vs. City of Davenport, 51 Iowa, 428; Iron R. R. Co. vs. Ironton, 19 Ohio St., 299; City Council vs. Goldsmith, 2 Spears (S. C.), 428; Hill vs. Charlotte, 72 N. C., 55; Baker vs. Boston, 12 Pick., 184; Commonwealth vs. Robertson, 5 Cush., 434; People vs. Supervisors, 17 N. Y., 235; Lane vs. Doe, 3 Sacm., 238; Wolf vs. Aldrich, 124 Ill., 591; Hamilton vs. Ill., 109 Ill., 302; Romby vs. Sheppard, 26 S. E., 278; Burns vs. Ill., 45 Ill., 397; State vs. Thompson, 46 S. W., 191; U. S. vs. Bernardine, 10 App. D. C., 294.

These acts are clearly within the police power of the legislature. Bertholf vs. O'Reilly, 74 N. Y., 514; The Slaughter Cases, 16 Wal., 36; Vanderbilt vs. Adams, 7 Cow., 349; Phelps vs. Racey, 60 N. Y., 10; Coronin vs. People, 82 N. Y., 323; 2 Kents Com. (Homes, 12th ed.), 340; Cooley on Const. Lim. (5 ed.), 739; Potters Dwarris on Statute, 444; Dill on Mun. Corporations, 95.

FACTORY INSPECTION IN WISCONSIN.

MILWAUKEE—MILWAUKEE COUNTY.

The following table, covering several pages shows, for each of the 697 factories in Milwaukee, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "horse power" the following abbreviations are used: Gas. for gas, or gasoline; elec. for electricity; l's'd for leased; or when power is obtained from building already included; hand for hand power.

FACTORY INSPECTION—MILWAUKEE.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.			EMPLOYEES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.		Males.	Females.	Total.	Under 16 years.	Number.
1 Abel & Bach Co.	St. Paul Ave.—Trunks .....	.....	2	250	75	325	64	2	100
2 Abels, F. E. & Co.	280 E. Water St.—Overalls .....	.....	1	6	50	56	3	elec.	1
3 Ackermann, R.	816 11th St.—Shoes	2	2	28	28	56	4	1	50
4 Acme Laundry Co., The	914 Winnebago St.—Laundry	1	1	6	16	22	1	1	25
5 Acme Pattern Co., The	Clinton St.—Patterns	1	1	6	5	5	1	1	8
6 Adamant Mfg. Co.	Third Ave.—Wall Plaster .....	.....	1	20	20	20	6	2	200
7 Adams, F. F., Tobacco Co.	64 W. Water St.—Cut Tobacco .....	.....	2	123	13	136	6	2	240
8 Adler, David & Son	East Water St.—Clothing .....	.....	2	190	10	100	6	1	12
9 Allis, E. P., Co., The	Clinton St.—Machinery	9	8	1,673	2	1,675	6	9	1,200
10 Allis, E. P., Co., The	Stewart Ave.—Iron Castings	1	1	309	.....	309	.....	2	320
11 Alresch, Chas., Co.	Fourth and Poplar St.—Carriages .....	.....	3	120	19	139	7	2	150
12 Amnseen Co.	315 Wells St.—Shoes	1	1	56	18	74	7	gas	1
13 Ambrosia Chocolate Co.	331 Fifth St.—Chocolate	1	1	4	8	12	4	1	55
14 American Boiler Works	Reed St.—Boilers	1	1	6	.....	6	.....	hand	.....
15 American Box Toe Co.	Montgomery Bldg.—Box Toes .....	.....	1	13	2	15	6	.....	.....
16 American Candy Co.	35 Huron St.—Candy .....	.....	1	45	57	102	39	1	80
17 American Fine Art Co.	256 South Water St.—Lithographing	1	1	100	25	125	8	2	90
18 American Health Food Co.	Clinton St.—Health Food	1	1	11	10	21	2	.....	.....
19 American Maltng Co.	Fifth and Chestnut St.—Malt .....	.....	3	14	.....	14	.....	2	80
20 American Maltng Co.	South Bay St.—Malt	2	2	72	.....	72	.....	3	450
21 American Maltng Co.	South Water St.—Malt .....	.....	8	59	.....	59	.....	3	375
22 American Maltng Co.	Florida St.—Malt	2	7	52	2	54	.....	2	200
23 American Maltng Co.	Third Ave.—Malt	1	1	5	5	6	.....	.....	.....
24 American Monolith Co.	789 30th St.—Flooring	1	1	1	.....	1	.....	.....	.....
25 American Sal-Soda Co.	Commerce St.—Sal-Soda	1	1	3	3	3	.....	lsd.	30
26 American Steam Laundry	172 Second St.—Laundry	1	1	6	9	15	.....	1	35
27 Andrae, Julius & Sons	247 Madison St.—Bicycles	1	1	104	.....	104	11	1	80
28 Andrae, Fred. Co.	Canal St.—Cut Stone	1	1	45	45	45	.....	2	150
29 Anstedt, C., Leather Co.	Commerce St.—Leather	1	2	44	44	44	.....	2	200
30 Atlantic Steam Laundry	433 Third St.—Laundry	1	1	2	2	2	10	1	12

FACTORY INSPECTION -- MILWAUKEE -- Continued

NAME OF ESTABLISHMENT.		LOCATION AND BUSINESS.		BUILDINGS.		EMPLOYEES.		BOILERS.			
				Under three stories in height.	3 or more stories in height.	Males.	Females.	Number.	Under 16 years.	Number.	Total horse power.
21	Atlas Mill	Commerce St.—Milling	1	2	44		44	2	44	240	
22	Buckes Mfg. Co.	313 Poplar St.—Brass Goods	1		3		3	5	3	5	
23	Badger Brewing Co.	Hubbard St.—Lager Beer		1	6		6	1	6	1	40
24	Badger Candy Co.	312 E. Water St.—Candy			10		30	1	40	1	30
25	Badger Dye Works	North Ave.—Dyeing	1		4		4	1	5	1	50
26	Badger Laundry	326 12th St.—Laundry			14		14	1	14	1	14
27	Badger Nail Co.	Muekego Ave.—Nails	1		14		14	1	14	1	14
28	Badger State Shoe Co.	St. Paul Ave.—Shoes		1	30		30	7	60	7	180
29	Bailey & Souk, Co.	795 Greenbush—Machinery	2		130		130	1	5	1	130
30	Baird Press, The	Montgomery Bldg.—Printing, etc.			8		8	1	8	1	8
31	Banker, C. I.	142 W. Water St.—Wire and Iron Goods	1		6		6	1	6	1	6
32	Barkow, H.	133 Milwaukee St.—Wagons	1		5		5	1	5	1	5
33	Bastam, Alexander	423 Fourth St.—Bicycles	1		6		6	1	6	1	6
34	Bayley Heating Co.	225 Cedar St.—Hot Water Heaters	1		1		9	1	10	1	30
35	Bay View Steam Laundry	Kinnikinnick Ave.—Laundry	1		10		60	4	130	4	90
36	Beach & Tonsen	51 Third St.—Iron Work	1		1		1	20	4	2	190
37	Benls, Torrey & Co.	62 Third St.—Shoes	1		1		1	106	2	2	300
38	Bechtner, Paul, Co., The	Virginia St.—Vinegar and Yeast	2		1		1	370	14	4	880
39	Beck, C. A., & Son	East of First Ave.—Boxes, etc.	3		14		14	1	14	1	14
40	Becker, Wm., Leather Co.	Commerce St.—Leather			39		39	1	39	1	39
41	Bellack, Chas. H.	402 Grand Ave.—Clothing	2		12		12	1	12	1	12
42	Benisch Bros.	401 Sixth St.—Scrap Iron	1		36		36	1	36	1	36
43	Benning, Joseph	514 Winnebago St.—Marble Cutter	1		1		1	1	1	1	1
44	Benjamin, H. M.	South Water St.—Coal and Wood	1		1		1	1	1	1	1
45	Benjamin, H. M.	River St.—Coal and Wood	1		1		1	1	1	1	1
46	Berger Redding Co.	331 Market St.—Redding	1		1		1	1	1	1	1
47	Berger Bros.	Commerce St.—Flour	2		8		8	1	8	1	8
48	Berger Bros.	Svenmore St.—Machinery	1		1		1	1	1	1	1
49	Bernhamkane, L.	Reed St.—Sblir	1		46		46	1	46	1	46
50	Berry Electric Dental Engine Co.	Montgomery Bldg.—Dental Appliances			5		5	1	5	1	5

61	Berthelet Sewer Pipe Co.	Clatou St.—Sewer Pipe	1	6	6	35	1	gas
62	Beyer, V.	Commerce St.—Upholstering	1	19	1	30	2	gas
63	Beyer & Son	375 Seventh St.—Wood Work	1	3	3	8	1	35
64	Biddell Chemical Co.	757 Thirtieth St.—Chemicals	1	6	5	5	1	35
65	Biersack & Nidemeyer	215 Fifth St.—Iron Work	1	20	20	8	1	35
66	Birkenwald, S. Co.	124 Fowler St.—Butcher Fixtures	1	8	8	8	1	35
67	Blatz, Val, Brewing Co.	Broadway—Brewers	8	6	257	257	10	1,400
68	Blatz, Val, Brewing Co.	Broadway—Bottling Dept.	1	165	41	268	87	elec.
69	Bodden Packing Co.	Muskego Ave.—Meat Packers	2	100	100	100	3	150
70	Boyenberger, F., & Bros.	280 Fifth St.—Iron Work	1	10	10	10	1	elec.
71	Bohn, Geo. H.	448 E. Water St.—Electrical Work	1	7	1	8	1	elec.
72	Bonnett, Michale & Co.	310 Galeua St.—Cut Stone	1	17	17	17	1	59
73	Bowen Mfg. Co.	2153 Chestnut St.—Bicycles	1	2	2	385	100	2
74	Bradley & Metcalf	E. Water St.—Shoes	1	254	133	280	4	1
75	Brand Stove Co.	256 Sixth St.—Stoves	2	230	7	7	1	80
76	Bremer Cycle Mfg. Co.	3 Clybourn St.—Bicycles	1	7	7	6	1	lsd.
77	Brill, J. P., Co.	1622 St. Paul Ave.—Glass Works	1	30	4	34	1	lsd.
78	Brink Bros.	Montgomery Building—Clothing	1	31	6	31	1	100
79	Brodderick Elevator Co.	Commerce St.—Elevators	1	6	6	6	1	hand
80	Broehen, John	453 Grove St.—Wagons	1	1	1	11	1	10
81	Brosser Bros.	515 Poplar St.—Sorting Rags	1	7	7	25	1	15
82	Brown, J. Co.	323 Fourth St.—Soap	1	25	25	24	1	15
83	Brown, Thos. H. Co.	371 Fourth St.—Wagons	1	24	36	36	2	4
84	Browning Mfg. Co.	820 Seventh St.—Electrical Goods	1	34	34	34	2	6
85	Bruss & Martin	575 Second St.—Interior Woodwork	1	375	2	24	3	200
86	Buh, Jos. Co.	Sixteenth and Erie Sts.—Upholstering	6	2	2	104	3	300
87	Bucyrus Steam Shovel & Dredge Co.	Saukville Mfg. Works—Machinery	1	22	22	85	4	53
88	Buehling, Jos.	Whitelago St.—Wagons	1	65	31	31	1	15
89	Burdick, Armitage & Allen	McCleagh Building—Job Printing	2	104	104	104	2	200
90	Burnham Bros.	Howell Ave.—Brick	2	65	31	31	1	15
91	Burnham Bros.	Wauwatosa—Brick	2	31	31	31	1	15
92	Burnham, Clint	Tenth Ave.—Iron Castings	1	15	15	15	1	20
93	Burnham, John L.	Park St.—Brick	1	6	6	6	1	20
94	Burrighs, G. & Sons	424 E. Water St.—Trunks	1	6	6	6	1	20
95	Buschers Dye Works	316 Walnut St.—Dreing	1	6	6	6	1	20
96	Buse & Lentzer	124 Ninth St.—Upholstering	1	6	6	6	1	20
97	Buttles, F. S.	119 Sycamore St.—Iron Work	1	10	65	75	2	90
98	Campbell Laundry Co.	514 Grand Ave.—Laundry	1	3	11	11	1	35
99	Canar Bros.	522 State St.—Laundry	1	85	85	85	1	75
100	Carmelle Bros.	Barclay St.—Furniture	2	3	3	3	1	12
101	Carnival Laundry	1840 Fond du Lac Ave.—Laundry	1	138	12	150	23	50
102	Carpeles & Co.	Thirteenth & St. Paul Ave.—Trunks	1	9	9	9	1	30
103	Carpenter Underwood Factory	518-520 Grand Ave.—Confectioneries	1	1	1	1	1	30
104	Casalia Bottling Works	Wauwatosa—Mineral Water	1	1	1	1	1	30

FACTORY INSPECTION — MILWAUKEE — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYEES.			BOILERS.		
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
Chain Belt Co.	Park St.—Chain Belts	1	1	75	3	78	27	7	lad.
C. M. & St. P. R. R. Car Shops	West Milwaukee—Repair Cars	12	13	1,388	3	1,391	75	8	598
C. M. & St. P. R. R. Co.	West Milwaukee—Motive Power	15	1	1,045	14	1,059	.....	.....	.....
C. M. & St. P. R. R. Co.	Seventh St.—Repair	1	1	110	1	111	14	2	75
C. M. & St. P. R. R. Co.	Garfield Ave.—Repair	3	3	117	1	118	.....	1	12
C. & N. W. Repair Shops	Lake Shore—Repair	2	.....	.....	.....	.....	.....	.....	.....
Citizen, The	Milwaukee & Michigan Sts.—Publishers .....	.....	1	6	2	8	.....	.....	.....
Claus Handle Bar Mfg. Co.	192 E. Water St.—Handle Bar	1	1	28	1	29	.....	.....	lad.
Clement, Williams & Co.	425-30 Broadway—Furniture	1	1	23	1	24	30	.....	.....
Cohen Bros.	335-40 Broadway—Clothing	1	1	30	110	140	16	.....	elec.
Collath, F. F. Co.	Commerce St.—Coal & Wood	1	1	30	.....	30	10	1	100
Cubic Mfg. Co.	219 Eighth St.—Art Metal	1	1	10	10	20	.....	.....	elec.
Conrad Bros.	Commerce St.—Leather	2	1	102	.....	102	10	4	95
Consolidated Vinegar Works, The	28-362 Milwaukee St.—Vinegar	1	1	9	9	18	9	2	75
Conway Cabinet Co., The	20th and St. Paul Ave.—Mantels and Cabinet.	4	1	125	.....	125	6	2	160
Coulton, C. L., Co.	Michigan & Detroit Sts.—Tobacco	1	1	17	17	34	17	1	.....
Cramer, Boardman Co., The	McGeoch Block—Photo Engraving	1	1	17	17	34	17	.....	elec.
Cream City Brass Works	Oregon & Clifton Sts.—Brass Goods	1	1	25	25	50	25	.....	180
Cream City Brewing Co.	459-510 Thirteenth St.—Brewers	3	2	58	2	60	.....	3	.....
Cream City Broom Co.	516 Lee St.—Brooms	1	1	12	12	24	12	.....	.....
Cream City Can Works	265-5 Reed St.—Tin Cans	1	1	20	20	40	2	.....	lad.
Cream City Hat Co.	355-9 E. Water St.—Gloves	1	1	40	25	65	65	.....	elec.
Cream City Laundry	487-489 Broadway—Laundry	1	1	7	23	30	.....	1	25
Cream City Mirror Plate Co.	Park & Hannover Sts.—Mirrors	1	1	18	30	48	18	1	30
Cream City Sash & Door Co.	Seventh Ave.—Sash, Doors & Blinds	3	3	250	.....	250	16	2	370
Cream City Woven Wire Works	Canal St.—Wire Mattresses	1	1	70	70	140	70	2	1 60
Crow Store Polish Co.	Twenty-sixth & Galena Sts.—Store Polish	1	1	6	6	12	6	1	.....
Crystal Soap Co.	56 Fifth St.—Toilet Soap	1	1	8	13	21	2	4	65
Cudaby Bros. Co.	Cudaby—Beef and Pork Packers	7	4	640	.....	640	11	16	1,230

1361	Daily Journal Co., The	Milwaukee & Michigan Sts.—Printing	...	3	1	68	8	74	3	lad.
1362	Dainoff, John	Washington St.—Floor	...	1	80	...	...	60	4	1,040
1363	Dainoff, John	Monument Block—Printing	...	3	1	4	5	9	...	...
1364	Davis, Martin	Kinnickinnic Ave.—Brick	...	1	...	...	...	...	2	100
1365	Davis Bros. Mfg. Co.	576-8 Clark St.—Paper	...	1	...	40	...	40	2	26
1366	Davis, J. N.	Michigan & Milwaukee Sts.—Plating	...	1	1	8	...	8	...	lad.
1367	Daprato, S.	315 National Ave.—Stationery	...	1	9	...	...	9	hand	...
1368	Dawe Bros. Printing Co.	McGeogh Block—Printing	...	1	10	...	...	10	...	elec.
1369	De Guenther Laundry, The	133 Mason St.—Laundry	...	1	6	23	...	29	1	45
1370	De Lang, H.	636 Park St.—Picture Frames	...	1	...	...	...	...	1	idle
1371	Doelger & Kirsten	505 Cedar St.—Machinist	...	1	16	...	...	16	...	50
1372	Der Seebote	96 Mason St.—Printing	...	1	7	...	...	7	...	elec.
1373	Diamond Ink Co.	Cambridge and Irving Sts.—Ink and Mucilage	...	1	4	13	...	17	1	5
1374	Diamond Soda Works	Galena & Commerce Sts.—Baking Powder	...	1	32	8	...	40	1	100
1375	Domestic Laundry	Milwaukee and Michigan Sts.—Laundry	...	1	1	32	5	12	...	lad.
1376	Domestic Laundry	205 Wells St.—Carriages	...	1	13	...	...	18	...	35
1377	Dorsch, Jno. & Son.	122 Grand Ave.—Gas Fitters	...	1	5	...	...	5	...	elec.
1378	Dayon, E. T.	Fifteenth St.—Bicycle Sundries	...	1	44	1	...	45	6	30
1379	Drake Mfg. Co.	Fifteenth & St. Paul Ave.—Bicycle Rims	...	1	50	...	...	50	7	30
1380	Drake Mfg. Co.	1015 Sherman St.—Tanks	...	1	6	...	...	6	...	30
1381	Duck Bros.	670 Kinnickinnic Ave.—Castings	...	1	65	...	...	65	...	2
1382	Dutcher, J. A. & P. E.	Thirtieth St.—Gas Machines	...	1	20	...	...	20	...	150
1383	Eagan Mfg. Co.	Commerce St.—Flour	...	1	83	...	...	83	4	30
1384	Eagle Flouring Mills	So. Milwaukee—Horse Shoes	...	1	150	...	...	150	...	480
1385	Eagle Horse Shoe Co.	2-32 Erie St.—Lye and Potash	...	1	7	13	...	20	9	50
1386	Eagle Lye Works	623-4 Poplar St.—Furniture	...	1	6	...	...	6	...	30
1387	Eagle Mfg. Co.	Walker St.—Coal Yard	...	2	14	...	...	14	...	45
1388	Eagleson, C. E.	1501 Cherry St.—Brushes	...	1	2	...	...	2	...	...
1389	Eilanger, Lucas	581 River St.—Coal and Wood	...	2	20	...	...	20	...	20
1390	Elmore, R. P., & Coal Co.	Seventeenth St.—Coal	...	2	55	...	...	55	...	80
1391	Elmore, R. P., & Coal Co., The	1124 Eighth St.—Tannery	...	1	9	...	...	9	...	40
1392	Elkett Bros.	502-4 Twenty-fifth St.—Laundry	...	1	2	8	...	10	...	15
1393	Empire Laundry	636 Hubbard St.—Tannery	...	1	3	...	...	3	...	20
1394	Engel, Frank	Seventh St.—Sorting Rags	...	1	2	11	...	13	...	...
1395	Engelhardt, Joe	Canal and Muskego Ave.—Packing Boxes	...	2	181	...	...	181	16	400
1396	Enterprise Box & Lumber Co.	10-13 Erie St.—Laundry	...	1	7	33	...	40	...	lad.
1397	Eureka Laundry, The	Broadway and Michigan St.—Printers	...	1	115	5	...	120	1	100
1398	Evening Wisconsin Co.	298 Broadway—Printer	...	1	12	...	...	12	...	...
1399	Everly, J. M.	39 Mason St.—Publishers	...	1	10	...	...	10	...	lad.
1400	Excelsior Publishing Co.	70 So. Water St.—Milling	...	4	52	...	...	52	...	435
1401	Faust, Kraus Co., The	W Milwaukee Street—R.V. Work	...	4	161	...	...	163	...	240
1402	Falk Co., The	5-57 Detroit St.—Confectionaries	...	1	20	34	...	54	...	elec.
1403	Falk Co., The	Beecher St.—Mill Machinery	...	3	22	35	...	35	...	275
1404	Fernekes, J. Co.	Cudahy—Chemists	...	6	30	...	...	30	...	240
1405	Fier & Stowell	...	...	2	...	...	...	...	...	...
1406	Fink & Febrlein Chem. Co.	...	...	2	...	...	...	...	...	...

FACTORY INSPECTION — MILWAUKEE — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.		BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.
							Number.
							Total horse power.
178 Fink & Fehrlin Chem. Co.	620-f Park St.—Chemists	2	1	20	3	33	2
179 Fixter, Jos.	30-6 Lee St.—Cooperage	1	1	3	3	6	80
180 Fixter, Jos.	Second and Cherry—Cooperage	1	1	51	51	102	1
181 Fischer Chemical Cleaning Works	547 E. Water St.—Dyeing	1	1	23	4	27	1
182 Flint, J. J. G.	114-16 W. Water St.—Tobacco	1	1	5	26	31	15
183 Forbach, Wm.	Lisbon and 2 1/2 St.—Wagons	1	1	67	2	69	135
184 Frank, L. & Sons, Packing Co.	641 Market St.—Sausage	4	1	400	2	402	100
185 Franzen, Wm.	Lincoln and Chase Sts.—Bottles	1	1	8	14	22	170
186 French Wax Figure Co.	468 E. Water St.—Wax Figures	1	1	6	300	306	181
187 Friedlander, Pub. Co.	230-2 State St.—Publishers	1	1	70	3	73	1
188 Friedlander, N.	Broadway & Michigan St.—Clothing	1	1	17	1	18	65
189 Freund Bros., Clothing Co.	Cherry St.—Maltsters	2	1	16	13	29	50
190 Freund Bros., Grain & Malt Co.	189 Sherman St.—Maltsters	4	2	13	6	19	35
191 Froedter Bros., Grain and Malt Co.	513 Chestnut St.—Starch and Milling	1	1	500	6	506	180
192 Froedter Bros., Grain and Malt Co.	186 8 Third St.—Rectifiers of Spirits	6	1	96	65	161	40
193 Fuller, W. & Co.	Wright and Tenth—Second Sts.—Shoes	6	1	414	8	422	600
194 Fuller & Warren Shoe Co., The K.	807 N. Water St.—Virginia Sts.—Pneu. Malt Drums	6	4	69	1	70	75
195 Galland, Heating Pneu. Malt Drum Co.	235 E. Water St.—Bell Mfg.	1	1	44	217	261	1
196 Galpin, A. F. & Sons	235 E. Water St.—Bell Mfg.	1	1	2	8	10	1
197 Gardner, Campbell & Son	Mitchell St.—Art Glass	1	1	12	1	13	120
198 Gavin Art Glass Works	184 8 Hanover St.—Hammocks and Nets	1	1	21	5	26	190
199 Gem Hammock & Fly Net Co.	Montgomery Bk.—Laundry	1	1	38	27	65	310
200 Gem Laundry	N. Water & Knapp St.—Milling	1	1	74	1	75	1
201 Gem Milling Co.	886 Fourth St.—Cooperage	1	1	12	1	13	120
202 Gemmhardt, John	537 Nineteenth St.—Marble Works	1	1	21	5	26	190
203 Gerlach, F. W. P.	Ninth and Vanrie Sts.—Maltsters	1	1	38	27	65	310
204 Gerlach, Wm. & Co.	Wagon and Wells St.—Pub. and Printing	1	1	74	1	75	1
205 Germania Pub. Co.	277 401 Reed St.—Upshooting	1	1	74	1	75	1
206 George & Heyer	277 401 Reed St.—Upshooting	1	1	74	1	75	1

207	Gettleman, A., Brewing Co.	5	1	71	7	71	4	8	210
208	Gunder & Paeschke	2	2	344	65	409	62	3	210
209	Gillet & Co.	1	1	10	10	10	1	1	led.
210	Globe Wire Works	1	1	10	10	10	1	1	20
211	Globe Wire Works, The	1	1	7	7	7	1	1	elec.
212	Goues, Phillip	1	1	35	35	35	1	1	20
213	Goues, Star Laundry	1	1	2	16	17	4	1	gas
214	Golla Bank	1	1	15	85	100	1	1	20
215	Gollach Co., The	1	1	5	5	5	1	1	gas
216	Graf, John	3	3	28	28	28	1	1	35
217	Graf, William & Co.	1	1	100	100	200	33	2	gas
218	Grant, Marble Co.	3	3	90	90	90	1	1	200
219	Groves & Seaman, Prior Frame Co.	1	1	60	60	60	1	1	65
220	Great Western Knitting Co.	1	1	3	28	29	1	1	...
221	Grede & Bro., George	1	1	12	12	12	1	1	...
222	Greve Lithographing Co.	1	1	6	6	6	1	1	led.
223	Greve Lithographing Co.	1	1	30	30	30	1	1	led.
224	Greenslade Foundry Co.	2	2	90	90	90	1	1	40
225	Gross, R. C. Bro. & Co., The	2	2	17	3	20	2	2	60
226	Gross, R. C. Bro. & Co., The	3	3	35	35	35	2	2	180
227	Gruhl, J. & Son	2	2	35	35	35	2	2	160
228	Gruhl, John & Door Co.	1	1	72	72	72	15	2	140
229	Gugler Lithographing Co.	1	1	75	6	81	2	2	100
230	Gunz, L., & Co.	1	1	75	75	75	3	3	300
231	Habegger, Theo.	2	2	11	11	11	1	1	...
232	Hack & Alten	1	1	2	5	7	1	1	20
233	Hachenbaum, Chas.	1	1	5	5	5	1	1	elec.
234	Hammersmith Engraving Co.	1	1	5	5	5	1	1	...
235	Hannah, Wm.	1	1	6	6	6	1	1	...
236	Hansen's Empire Fur Factory	1	1	44	43	87	1	1	...
237	Hansen, J. & Sons	1	1	3	3	3	2	1	15
238	Hanser Coal Co., Chas. J.	1	1	15	15	15	1	1	65
239	Hautkamp & Connor	1	1	20	20	20	2	2	led.
240	Hayes, George	1	1	14	14	14	1	1	35
241	Hebenstret & Bartelt	2	2	8	8	8	1	1	...
242	Hecht & Zumach	1	1	15	15	15	1	1	...
243	Helt, Frank	1	1	9	21	30	1	1	hand
244	Heintz Specialty Co.	1	1	34	75	109	8	1	led.
245	Heinel & Son, Jos.	2	2	24	24	24	1	1	60
246	Heidelberg, Leonard	1	1	5	5	5	1	1	10
247	Helmann, M., & Co.	1	1	100	100	130	6	1	...
248	Helmann, Geo. H., & Co.	1	1	16	14	30	8	1	hand
249	Helling Enameling Co., The	1	1	14	14	14	1	1	led.
250	Hendee Wire Brush Co.	1	1	18	18	18	1	1	...
251	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
252	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
253	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
254	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
255	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
256	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
257	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
258	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
259	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
260	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
261	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
262	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
263	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
264	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
265	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
266	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
267	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
268	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
269	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
270	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
271	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
272	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
273	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
274	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
275	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
276	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
277	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
278	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
279	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
280	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
281	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
282	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
283	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
284	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
285	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
286	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
287	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
288	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
289	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
290	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
291	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
292	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
293	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
294	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
295	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
296	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
297	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
298	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
299	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
300	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
301	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
302	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
303	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
304	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
305	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
306	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
307	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
308	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
309	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
310	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
311	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
312	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
313	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
314	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
315	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
316	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
317	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
318	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
319	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
320	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
321	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
322	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
323	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
324	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
325	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
326	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
327	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
328	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
329	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
330	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
331	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
332	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
333	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
334	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
335	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
336	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
337	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
338	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
339	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
340	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
341	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
342	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
343	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
344	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
345	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
346	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
347	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
348	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
349	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
350	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
351	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
352	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
353	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
354	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
355	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
356	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
357	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
358	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
359	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
360	Hennrichs, Geo. H., & Co.	1	1	14	14	14	1	1	...
361	Hennrichs,								

231	Jalase, H. B.	1018-1024 St. Paul Ave.—Packing Boxes	1	7	7	1	7	1
232	Jenkins, W. T., & Co.	Mitcham and Milwaukee—Blank Books	.....	1	15	30	45	8
233	Jewett & Sherman Co.	Broadway and Detroit—Baking Powder	.....	1	17	6	23	2
234	Johnson Electric Service Co.	120-122 Sycamore St.—Heat Regulators	1	133	185	26	193	2
235	Johnston Bros. Factory	12-26 Erie St.—Riscuit	.....	1	108	89	180	2
236	Johnston, Robt. A., Co.	Canton and Florida Sts.—Candy	.....	1	141	271	28	2
237	Johnson, H. J., Soap Co.	Fourth St.—Soap	.....	1	48	26	14	4
238	Jones Bros.	618-620 Poplar St.—Corks	2	1	10	10	10	1
239	Joya Bros.	235 East Water St.—Sail and Awning	.....	1	8	9	19	2
240	Jung Brewing Co.	Fifth and Cherry Sts.—Brewers	6	7	7	1	7	3
241	Kaempf, F. R.	110-112 Clybourn St.—Coppersmith	1	8	8	1	8	1
242	Kammarco Knitting Co.	Fourth and Tower St.—Hosiery, Gloves, etc.	.....	2	80	280	390	3
243	Kalt, Zimmer Mfg. Co.	140-142 Reel St.—Overlappers and Leggings	1	8	16	24	3	3
244	Kellerey & Treck Co.	Sate and Clinton—Mach. and Tools	.....	1	8	8	8	1
245	Keller, F. W. & Son	228 Oregon Ave.—Door Frames	1	6	6	6	6	1
246	Kempanith Mach. Tool Co. *	Westward Ave.—Tools	.....	1	63	63	63	1
247	Keogh Edward	318 E. Wabash—Furniture	.....	1	44	4	48	1
248	Ketter, Fred	335-351 Third St.—Cooperage	2	1	35	35	35	1
249	Kieckhoefer Elevator Co.	1083-1034 St. Paul Ave.—Elevators	1	20	20	20	20	1
250	Kindling, Louis	257 West Water St.—Cigars	.....	1	46	14	60	4
251	King-Cramer Co.	342 Broadway—Printers	.....	1	47	1	48	1
252	Kipp, B. A.	873-889 North Water St.—Inholstering	.....	1	52	2	54	elec.
253	Knapp, John	1911 Villet St.—Cardiarge Works	1	1	45	5	6	6
254	Knauber, J., Lithographing Co.	222 Cedar St.—Lithographing	.....	1	45	5	50	2
255	Knibel, H. P. C.	558 Fifth St.—Inholstering	.....	1	15	1	16	4
256	Knibbel, Otto C.	960 Third St.—Carriages and Wagons	1	6	6	6	6	1
257	Kopend, Andrew	Madison and Barclay—Tools	.....	1	17	17	17	1
258	Krantz, Chas., Estate	Wauwatosa—Brick	3	1	58	58	5	2
259	Kraus, F. & Co., Elevator A	Lake St. and St. Paul Ave.—Grain Elevator	.....	1	17	17	31	1
260	Kraus Shoe Co.	625 Cedar St.—Shoes	.....	1	24	7	31	1
261	Kruecke Bros.	515 Park St.—Brass Founders	.....	1	6	6	6	gns
262	Krueger Mfg. Co.	423-465 Front St.—Repairing	1	1	7	7	7	gns
263	Kuehn, F., Boot & Shoe Co.	446 448 Clinton St.—Shoes	.....	1	41	30	71	2
264	Kump, Mrs. B.	192 Villet St.—Bedding	1	1	2	1	3	1
265	Kunz, J. L. Mach. Co.	454 Market St.—General Machinist	.....	1	6	6	6	gns
266	Kuryer Polak	Montgomery Bldg.—Printing	.....	1	12	12	12	6
267	Lake Side Distilling Co.	Carrollville—Distilling Spirits	4	1	14	14	14	6
268	Lake View Steam Laundry	1908 Klunkinnie Ave.—Laundry	.....	1	1	6	7	1
269	Lamp & Miller Mfg. Co., The	511 Cedar St.—Brass Goods	2	1	23	23	28	1
270	Lange, A. Mfg. Co.	Villet St.—Bar and Office Fixtures	1	1	15	15	15	gns
271	Langenberger, John	319 Wells St.—Contractor	.....	1	14	14	14	1
272	Larson, Mons	603 Clinton St.—Clothing	.....	1	13	13	13	hand
273	Lassen, K. M.	729-731 Eighth St.—Furniture	1	1	5	5	5	25
274	Leuer, Peter	606 Tenth St.—Contractor	.....	1	7	7	7	10

FACTORY INSPECTION — MILWAUKEE — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.		
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
325 Layton & Co.	56-58 West Water St.—Meat Packers	6		52		52	3	240	
326 Layton Park Mfg. Co.	Layton Park—Bicycles	1		20		20		35	
327 Leugue Cycle Works	Fifteenth St. and St. Paul Ave.—Bicycles		1	2	1	3		30	
328 Leliedersdorf, B., & Co.	South Water and Reed Sts.—Tobacco		1	46	86	130	2	130	
329 Lemke, August	419 State St.—Brooms	1		3		3			
330 Lentz, A., Sash & Door Factory	Waunatosa—Sash and Doors	1		10		10		40	
331 Liebenberg Co.	Seventh St.—Sorting Rags	1		2	3	5			
332 Lingelbach's Laundry	Waunatosa—Laundry	1		3	6	9		36	
333 Lincoln Ave. Brick Co.	Lincoln Ave.—Brick	1		110		110	4	300	
334 Lindemann, A. J., & Hoverson Co.	158 Hanover St.—Stoves	2		275		275	59	86	
335 Lindemann, J. P., & Sons	Fourth and Park Sts.—Tinware	2		72	6	77	37	1	
336 Lintrink & Son	677 East Water St.—Sliding Door Tracks	1		6		6		hand	
337 Liquid Car. Acid Mfg. Co.	327-329 Ninth St.—Liquid Car. Acid	1		13		13		13d.	
338 Loeffelholz, A. L., & Co.	Clinton St.—Brass Goods	1		26		26		25	
339 Loewenbach, B., & Son	314-316 East Water St.—Printers	1		19	3	22		22	
340 Loewenbach, A.	122 Sycamore St.—Printing	1		5		5		elec.	
341 Loewenthal, B., & Bros.	55 Third St.—Sorting Metal	1		6		6			
342 Logemann Bros.	288 Oregon St.—Machinists	1		24		24		40	
343 Lohr & Welfenbach	Forest Home—Marble and Granite	1		9		9		hand	
344 London Electrotype Co.	Montgomery Bldg.—Electrotypers	1		6		6		13d.	
345 Lorenz Bros. Macaroni Co.	200-202 Twelfth St.—Macaroni	1		8		8		20	
346 Ludwig & Schwank	20 Middle St.—Extracts	1		5		5			
347 Luther & Glese	258 Lake St.—Tools and Machinery	1		22		22		35	
348 Mahler & Albenberg Co.	382 Broadway—Overalls, Jackets, etc.	1		7	66	73	3	gas	
349 Manville Covering Co.	3rd and Clingbourne—Pipe and Boiler Covering	3		42	6	47		320	
350 Mandel Engraving Co.	Cawker Bldg.—Engraving	1		10		10		elec.	
351 Marshall, Fred	1021 Fourth St.—Brushes	1		2	1	3			
352 Martin, Geo., Leather Co.	533-550 Commerce St.—Leather	1		81		81		16	
353 Mathews Bros. Mfg. Co.	16 69 Fourth St.—Furniture	1		113	2	115		13	

354	Mayer, F., Boot & Shoe Co.	166-180 Walnut St.—Boots and Shoes	1	1	300	106	405	71	gas
355	Maer, F., Boot & Shoe Co.	Thirtieth St.—Boots and Shoes	2	1	85	50	135	25	76
356	Marnew Mfg. Co.	983-992 Thirty-first St.—Chairs	1	1	225	5	235	46	elec.
357	Maxim Mfg. Co.	938 Ferry St.—Bicycle Parts	1	1	8	2	8	1	elec.
358	McAlpine Engraving Co.	Montgomery Bldg.—Engraving	1	1	15	15	15	1	180
359	McGeogh Block	Milwaukee and Milwaukee Sts.—Electric Plant	1	1	24	12	24	2	60
360	McGregor, T. L.	221-227 Oregon St.—Rollers and Smoke Stacks	1	1	24	12	24	2	76
361	Mecklenburg, A. F., Lumber Co.	Thirtieth St.—Interior Wood Work	1	1	150	12	162	39	150
362	Meincke, A.	Mason and Front Sts.—Toys	1	3	570	16	570	40	180
363	Melnselbach, A. D.	No. Milwaukee—Bicycles	1	2	16	6	16	1	15
364	Melssenheimer Printing Co., The	National and Clinton Sts.—Printing	1	1	5	5	5	1	hand
365	Mellen, Wm., & Son	340 Barclay St.—Brass Founders	1	1	24	24	24	2	20
366	Menke, F., & Co.	58 Clybourn St.—Wagons	1	1	20	20	20	2	elec.
367	Mertes & Miller Co.	Racine & Lake Sts.—Rollers, Smoke Stacks	1	1	8	8	8	7	700
368	Meyer, Rotin, Printing Co.	McGeogh Bldg.—Printing	1	1	131	11	142	8	lad.
369	Milbrath, D. A.	313-315 Prairie St.—Carriages, etc.	1	1	25	25	25	5	280
370	Miller, A. L.	Reed St.—Tobacco	1	1	5	5	5	2	gas
371	Miller, Fred, Brewing Co.	Wauwatosa—Brewers	4	2	32	69	89	16	gas
372	Miller, H. C., & Co.	342 Broadway—Pub. and Binding	1	1	5	5	5	2	gas
373	Milwaukee Automobile Co.	19th and St. Paul Ave.—Steam Motor Vehicles	1	1	19	19	19	11	gas
374	Milwaukee Bag Co.	Erie St.—Jute Sticks	3	1	60	60	60	36	lad.
375	Milwaukee Bag Co.	215 Reed St.—Bamboo Furniture	1	1	67	67	67	1	lad.
376	Milwaukee Bedding Co.	W. Water St.—Bedding	1	1	29	29	29	1	150
377	Milwaukee Blank Book Mfg. Co.	218-220 Third St.—Blank Books	1	1	204	9	208	2	190
378	Milwaukee Boiler Co.	220 Oregon St.—Rollers and Smoke Stacks	1	1	51	51	51	1	85
379	Milwaukee Brass & Copper Works	Garfield Ave.—Brass and Copper Works	3	1	143	143	143	6	750
380	Milwaukee Brass Mfg. Co.	190 E. Water St.—Brass Castings and Goods	1	1	176	176	176	2	200
381	Milwaukee Brewing Co.	Clarence and 8th Sts.—Brewers	5	1	6	6	6	2	gas
382	Milwaukee Bridge & Iron Works	16th and 18th Sts.—Bridge Builders	2	2	24	24	24	2	20
383	Milwaukee Casket Co.	15th and St. Paul Ave.—Caskets	1	1	95	95	95	3	120
384	Milwaukee Cement Co., Plant 1	Town of Milwaukee—Cement	6	2	25	25	25	1	100
385	Milwaukee Cement Co., Plant 2	Town of Milwaukee—Cement	6	2	29	29	29	2	elec.
386	Milwaukee Chair Co.	308 Center—Chairs	3	1	48	48	48	4	1,200
387	Milwaukee Coffee Roasting Co.	Clinton St.—Roasting Coffee	1	1	39	39	39	18	4,500
388	Milwaukee Cycle Co.	249-51 Lake St.—Bicycles	5	1	24	24	24	24	24
389	Milwaukee Dry Dock Co.	Ft. of Mineral St.—Ship Builders	5	5	90	90	90	5	3,000
390	Milwaukee Dry Dock Co.	Canal St.—Ship Builders	5	5	15	15	15	2	250
391	Milwaukee Electric Co.	256-8 Reed St.—Electric Machinery	1	1	25	25	25	1	100
392	Milwaukee Electric Ry. & Lt. Co.	Kinnickinnick and Maple Sts.—Machine Shop	1	1	29	29	29	2	elec.
393	Milwaukee Electric Ry. & Lt. Co.	451 Broadway—Elec. Power and Light	1	1	48	48	48	4	1,200
394	Milwaukee Electric Ry. & Lt. Co.	Kinnickinnick and Clinton Sts.—Repairing	1	1	45	45	45	18	4,500
395	Milwaukee Electric Ry. & Lt. Co.	River St.—Elec. Power and Light	1	1	39	39	39	24	24
396	Milwaukee Electric Ry. & Lt. Co.	Onelda and River Sts.—Elec. Power and Light	1	1	24	24	24	5	3,000
397	Milwaukee Electric Ry. & "B"	Seventh St.—Grain Elevator	1	1	15	15	15	2	250

FACTORY INSPECTION — MILWAUKEE — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.
388 Milwaukee Elevator Co., "C"	Sixth St.—Grain Elevator	1	1	11	11	11	11	2
389 Milwaukee Enam. & Electro-Plating Co.	404 Sixth St.—Enameling	1	1	13	13	13	20	1
390 Milwaukee Engineering Co.	St. Paul and 19th Sts.—Bicycles	1	1	60	60	60	100	2
391 Milwaukee File Co.	31st and Cherry Sts.—Files and Rasps	1	1	28	5	36	100	1
392 Milwaukee Foundry & Supply Co.	Ferry and Lake Sts.—Foundry Supplies	1	1	5	5	6	lad.	1
393 Milwaukee Furniture Co.	36 Broadway—Furniture	1	1	4	4	4	7	1
394 Milwaukee Gas Light Co.	Jefferson and Menomonic Sts.—Gas	7	7	180	190	190	765	2
395 Milwaukee Gas Lt. & Tar Co.	25th and St. Paul Sts.—Tar	4	4	7	7	7	60	1
396 Milwaukee Gas Stove Co.	Chase St.—Gas Stoves	1	1	21	21	21	lad.	1
397 Milwaukee Handle Bar Co.	Cedar St.—Bicycles	1	1	12	12	12	gas	5
398 Milwaukee Harvester Co.	Park St.—Farm Machinery and Implements	12	6	600	600	600	370	1
399 Milwaukee Hay Tool Co.	Layton Park—Hay Tools and Corn Huskers	4	4	37	37	37	100	1
400 Milwaukee Herold	435 Broadway—Printers	1	1	33	4	37	elec.	1
401 Milwaukee Knitting Works	146 Fourth St.—Knit Goods	1	1	1	1	101	elec.	2
402 Milwaukee Lace Paper Co.	McDonough Bk.—Lace Paper	1	1	10	17	27	6	1
403 Milwaukee Linseed Oil Co.	Barclay & Florida Sts.—Linseed Oil	2	2	28	1	29	180	2
404 Milwaukee Lith. & Eng. Co.	217-219 Third St.—Lith. and Eng.	1	1	81	1	82	3	1
405 Milwaukee Malleable & Grey Iron Co.	Layton Park—Castings	2	2	50	50	50	100	1
406 Milwaukee Mfg. Co.	No. Milwaukee—Bicycle Specialties	5	5	245	6	246	16	1
407 Milwaukee Mfg. Co.	Park St.—Planing	1	1	6	6	6	1	1
408 Milwaukee Metal Skylight & G. I. Works	87-89 Sixth St.—Skylights, Cornices, etc.	1	1	9	9	9	9	1
409 Milwaukee Mirror & Art Glass Works	203-205 Broadway—Mirror Plates, etc.	1	2	40	40	40	gas	1
410 Milwaukee Monument Co.	8th and Mitchell Sts.—Monuments	1	1	30	30	30	15	1
411 Milwaukee Net Co.	416-18 Fourth St.—Fly Nets	1	1	16	32	48	11	1
412 Milwaukee Novelty Dye Works	Mich. and Jefferson Sts.—Cleaning and Dyeing	1	1	9	8	12	50	1
413 Milwaukee Ornamental & Carving Co.	416-418 Fowler St.—Carving	2	2	9	9	9	hand	1
414 Milwaukee Pickle Co.	435 Clybourn St.—Leather Mittens and Palms	1	1	16	34	50	3	1
415 Milwaukee Pickle Co.	Wauwatosa St.—Pickles	5	5	8	7	15	gas	1
416 Milwaukee Saloon Fixture Co.	301 Third St.—Saloon and Office Fixtures	1	1	17	17	17	35	1

427	Milwaukee Steam Boiler Works	233 5 Oregon St.—Boilers and Smoke Stacks...	1	1	5	5	1	10
428	Milwaukee Steel Casting Co.	Clinton St.—Steel Castings	1	1	22	22	1	36
429	Milwaukee Steam Fitting & L. Co.	3 6 Poplar St.—Arc Lamps	1	2	1	6	9	
430	Milwaukee Suspender Mfg. Co.	227 Chestnut St.—Suspenders	1	1	1	1	7	
431	Milwaukee Tack Co.	Layton Park—Tacks, Shoe and Small Nails...						
432	Milwaukee Wood Mfg. Co.	403 St. Paul Ave.—Wagons and Sleighs	1	1	40	9	8	80
433	Milwaukee Wood Work Co.	556 386 Island Ave.—Sash, Doors and Blinds	3	21	21			60
434	Milwaukee Worsted Cloth Co.	43 Galea St.—Worsted Cloth	2	43	43			100
435	Mineral Paint Co.	324 and Galea St.—Worsted Cloth	1	20	27	7		120
436	Minerva Pig Iron Co.	80 Milwaukee—Mineral Paint	1	1	1			35
437	Milwaukee Pig Iron Works	Klunkinuk and R. R. Crossing—Pig Iron	3	80	80			2120
438	Milwaukee Worsted Mill	20th and St. Paul Ave.—Wagon Iron Works	1	43	43	6		100
439	Model Laundry	E. of Park St.—Worsted Yarns	2	54	165	25		240
440	M. Molitor	865 Warren St.—Laundry	1	6	35	4		45
441	Montgomery Block	314 16 E. Water St.—Paper Boxes	1	9	37			15
442	Moore, H. Co.	Michigan and Milwaukee Sts.—Office	1	5				200
443	Moore & Whitmore	112 120 Second St.—Machinists	1	25	25			60
444	Mueller, E. P.	80 Milwaukee—Shipping Hammers & Baskets	1	38	38			35
445	Mueller, John I.	Commerce St.—Drying Grains	1	20	20			225
446	Mueller, John I.	13th and Fond du Lac Ave.—Wagons	1	7	7			band
447	Mueller & Sons Co., The	414 Fourth St.—Wagons	1	6	6			
448	Mueller, Rudolph	445 475 Canal St.—Clear and Packing Boxes	1	137	28	29		185
449	Munkwitz, R. H.	118 Second St.—Pattern Maker	1	6	6			160
450	Munzberger, C. H.	Muskego Ave.—Machine Shop	1	4	4			10
451	My Laundry Co.	Burrell St.—Mineral Water	1	5	5			
452	National Blower Works	2446 Vliet St.—Laundry	1	1	10			20
453	National Distilling Co.	17th and St. Paul Ave.—Blowers, Heaters, etc.	1	26	26			25
454	National Enamel Co.	28th St.—Distilling Spirits	1	33	33			550
455	National Enamel Co.	Bay View—Nuts and Bolts	2	20	20			50
456	National Envelope Co.	St. Paul and 9th Sts.—Sheet Iron and Tinware	5	771	308	1,074	4	960
457	National Knitting Co.	255 9 So. Water St.—Envelope	1	41	64	106		90
458	National Paper Machine Works	889 905 Clinton St.—Kitt Goods	1	130	250	350	70	450
459	National Sash & Door Co.	291 E. Water St.—Paper Machine Goods	1	13	30	43	11	45
460	National Straw Works	Seventh St.—Sash and Doors	1	36	36			240
461	New Method Laundry	18th and Scott Sts.—Straw and Felt Hats	1	50	275	325		
462	News Publishing Co.	617 State St.—Laundry	1	4	23			40
463	Neldecken, H.	W. Water St.—Printing	1	28	28			elec.
464	Nordberg Mfg. Co.	237 239 E. Water St.—Blank Books	1	53	16			elec.
465	North Side Brush Works	480 490 Virginia St.—Engine and Pump Mach.	3	258	258	6		100
466	North Side Carriage Works	928 Third St.—Brushes	1	1	4			band
467	North Side Coal Co.	2d and Sherman Sts.—Carriages and Wagons	1	15	15			60
468	Northwestern Chemical Works	Commerce St.—Coal	1	9	9			1
469	Northwestern Fuel Co.	Ninth St.—Chemicals	2	5	5			270
470	Northwestern Furniture Co.	N. Canal and 17th Sts.—Coal	1	80	80			150
		47 N. Water St.—Office and Saloon Fixtures...	1	66	66			

LABOR AND INDUSTRIAL STATISTICS.

FACTORY INSPECTION—MILWAUKEE—Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.
Northwestern Laundry	1098 Richards St.—Laundry	1	1	1	13	14	.....	1
471 Northwestern Lithograph Co.	318 Third St.—Lithographing	1	1	20	.....	20	5	30
472 Northwestern Malleable Iron Co.	Park St.—Iron Castings	11	.....	700	.....	700	49	280
473 Northwestern Marine Elevator Co.	So. Water St.—Grain Elevator .....	.....	3	5	.....	5	.....	150
474 Northwestern Oil Co.	Walker St.—Soap and Oil	1	.....	12	1	13	.....	110
475 Northwestern Straw Works	623 Reed St.—Straw and Felt Hats .....	.....	3	175	325	500	.....	230
476 Novelty Handle Works	1806 St. Paul Ave.—Tool handles	1	.....	6	.....	6	.....	gas
477 Nut and Washer Mfg. Co.	Reynolds and Wilcox Sts.—Nuts, Washers, etc.	2	.....	72	4	76	11	2
478 Oberberger Jos.	135 Barclay St.—Ship Smithing	1	.....	9	.....	9	.....	140
479 Obermann Brewing & Bottling Co.	787 24½ St.—Soft Drinks	1	.....	9	.....	9	.....	50
480 Ogden, G. W., & Co.	172-174 Third St.—Carriages and Buggies .....	.....	1	8	.....	8	.....	.....
481 Onherney, Chas., & Co.	603 Cedar St.—Sorting Rags	1	.....	3	15	18	.....	.....
482 Osset Bros.	497-503 Sixth St.—Church Furniture	1	.....	14	.....	14	.....	30
483 Owen & Welbrecht	McGeough Bk.—Printers .....	.....	1	6	.....	6	2	elec
484 Pabst Brewing Co.	9th and 10th Sts.—Bottling Dept. ....	.....	.....	175	325	500	74	.....
485 Pabst Brewing Co.	Chestnut and 9th Sts.—Brewers and Malsters	14	12	1,111	375	1,286	229	3,000
486 Paline Bros. Co.	Canal St.—Grain Elevator	1	1	14	.....	14	.....	250
487 Palace Steam Laundry	234 Reed St.—Laundry	1	.....	4	19	23	1	40
488 Pantke, F. R.	284 E. Water St.—Furs and Hats	1	.....	6	11	17	1	.....
489 Patton, James E., Co.	Barclay and Lake Sts.—Mixed Paints .....	.....	1	54	16	70	.....	90
490 Pawling & Harneschfeger	156 Clinton St.—Electrical Machinery .....	.....	1	123	.....	123	.....	.....
491 Pederson, C. S.	National Ave.—Clothing	1	.....	3	10	13	.....	.....
492 Pedermann, Henry	234 Chestnut St.—Brooms	1	.....	10	.....	10	.....	.....
493 Peerless Laundry Co.	517 Grand St.—Laundry	1	.....	1	17	18	.....	30
494 Peetz & Hoffmann	51-53 Third St.—Carriage and Sleigh Wood Wk.	1	.....	6	.....	6	.....	hand
495 Perfection Laundry	277 Broadway—Laundry .....	.....	1	2	28	30	5	30
496 Peterson, Albert	Montgomery Bldg.—Paper Rolling .....	.....	1	2	1	3	.....	1
497 Pfannerstill & Huback	North Milwaukee—Bicycle Specialties	1	.....	30	.....	30	.....	75
498 Pfeiffer & Smith	128-30 Ferry St.—Patterns	1	.....	10	.....	10	.....	50
499 Pflüger & Vogel Leather Co.	1st and Oregon Sts.—Leather	3	5	768	2	770	49	1,060

801	Pfister & Vogel Leather Co.	1st and Viaduct Sts.—Leather	7	9	723	785	30	7	875
502	Pfister & Vogel Tannery	Stewart St.—Leather	9	2	308	308	2	5	400
503	Pfister & Vogel Leather Co.	Vogel's Island—Leather	3	4	144	148	2	2	200
504	Phlagrunt Co., The	277 E. Water St.—Confectioneries	1	1	30	55	9	1	50
505	Phila., Reading Coal & Iron Co.	150 2d St.—Coal	5	1	25	30	65	3	180
506	Phoenix Knitting Works	311-313 Broadway—Knit Gloves and Mittens	1	1	215	321	6	5	400
507	Phoenix Tannery	612 630 Commerce St.—Leather	2	1	325	325	6	1	lad.
508	Pietech, Ferdinand	619-621 Cedar St.—Brass Founders	1	1	11	11	6	2	60
509	Pietech, Otto	246-250 W. Water St.—Chemical Dyeing	2	2	20	60	4	2	elec.
510	Pinard, A. F. Co.	346 3d St.—Silver, Copper, Bronze Plates	1	1	4	4			
511	Plankington Packing Co.	Muskego Ave.—Meat Packers	1	5	376	376		9	750
512	Palaschek, Chas., & Bro.	431 Chestnut St.—Brass Pictures	1	1	16	16			gas
513	Pollworth, Fred., & Bro.	Cawker Block—Printers	1	1	8	12		3	elec.
514	Poppert, George, Mfg. Co.	No. Milwaukee—Sash, Doors and Blinds	1	1	80	90		1	160
515	Prescott, Fred M., Steam Pump Co.	Oregon & Barclay Sts.—Steam Pumps	1	1	50	51		1	60
516	Preuss, R. J., Co.	670 1/2 Innikinnick Ave.—Mattresses, Bed Sp'gs	1	1	30	32		1	lad.
517	Printz & Rau	653-653 E. Water St.—Grain Cleaning Mach.	1	1	50	60		1	80
518	Quin Blank Book Co., The	437 E. Water St.—Blank Books	1	1	18	10			elec.
519	Radke Bros. & Karsch	120-124 Huron St.—Printers	1	1	28	28			lad.
520	Roetz, Gustav	Madison & 1st Sts.—Wagons, Carriages, etc.	1	1	5	5			hand
521	Rauschenberger, Jno., Co.	871 Teutonia St.—Ropes, Cordage, etc.	2	1	38	38	21	1	25
522	Razali, H. G., Co., The	386-388 E. Water St.—Blank Books	1	1	45	60	3	1	elec.
523	Rediske Vinegar Co.	S. of 8th St.—Vinegar and yeast	1	1	7	7		1	45
524	Regina Mfg. Co.	Montgomery Bldg.—Ladies' Wrappers	1	1	10	20			lad.
525	Rehling, Jno. E., & Co.	215 Reed St.—Upholstering	1	1	17	30	2		
526	Reineck, Wm.	856 Holton St.—Brooms	1	1	2	2			
527	Reliance Laundry	213 Reed St.—Laundry	1	1	2	11		1	40
528	Reliance Mills	70-75 W. Water St.—Flour	1	1	24	24		3	375
529	Reliance Stamp & Printing Co.	423 E. Water St.—Stamps and Printing	1	1	4	4			elec.
530	Rialto Elevator Co.	S. Water St. and Broadway—Grain Handlers	2	2	30	30		1	250
531	Rice, J. H., & Friedmann Co.	19th and Lloyd Sts.—Clothing	1	1	15	185	24	1	150
532	Rich, A. W., Shoe Co.	S. Water and Reed Sts.—Ladies' Shoes	1	1	95	55			lad.
533	Rickson & Schwartz Paint Co.—	Wilcox St.—Mineral Paint	2	1	12	12		1	100
534	Rickers & Co.	54-53 3d St.—Soap	1	1	32	5			
535	Riemer, A. H., Co.	227 Cedar St.—Shoes	1	1	14	8			gas
536	Riless, A.	Scott and Grove Sts.—Bicycles	1	1	5	5			gas
537	Rless, Leopold	Cherry St.—Cooperage	1	1	10	10			gas
538	Right Laundry, The	124 Howell Ave.—Laundry	1	1	2	10		1	30
539	Rilling, John E.	215 Reed St.—Upholstering	1	1	16	1			
540	Ritter, Louis	265-270 5th St.—Saloon Fixtures	1	1	11	11			
541	River Side Printing Co.	230 3d St.—Printing	1	1	94	94	2	2	200
542	Rockwell Mfg. Co.	Park St.—Sash, Doors and Blinds	1	3	400	400	6	6	480
543	Romadka Bros. Co.	22-25 3d St.—Trunks	1	6	184	21	37	2	130
544	Rosenthal Corn Husking Mach. Co.	32d St.—Corn Husking Machinery	2	1	11	11			gas

FACTORY INSPECTION—MILWAUKEE—Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.
546 Roth Mfg. Co.	231 7th St.—Mustard Pickles, etc.	1	1	4	4	8	1	2
546 Royal Steam Laundry	334-338 Clinton St.—Laundry	1	1	2	7	10	1	1
547 Rundie-Spence Mfg. Co.	8. Water and Virginia Sts.—Founders	3	1	85	85	170	13	2
548 Russia Tanning & Fur Co.	190-194 Hanover St.—Fur Tanning	1	1	48	18	66	10	1
549 Sanger Handle Bar & Plating Co.	182-194 E. Water St.—Handle Bars and Plating	1	1	31	10	41	10	1
550 Sauttery Paper Co., The	146-160 4th St.—Toilet Paper and Appliances.	1	1	4	5	9	9	1
551 Scharneck Bros.	Washington and 7th Sts.—Metal Works	1	1	6	6	12	6	1
552 Schilke, H. C.	327 29 Fifth St.—Wagons	1	1	8	8	16	8	1
553 Schillinger & Tank	Chestnut and Fourth Sts.—Cigars	1	1	14	5	19	1	1
554 Schlipanski, J.	80. Milwaukee—Church Furniture	1	1	6	6	12	6	1
555 Schlitz, Jos. Brewing Co.	Third and Walnut Sts.—Brewers	9	6	782	128	910	143	15
556 Schmidt & Baeneck	825 Sixth St.—Brick Molds	1	1	5	5	10	5	1
557 Schmidt, F. & Son	301 4 Fourth St.—Galvanized Iron	1	1	12	12	24	12	1
558 Schmidt, Peter & Co.	356 North Ave.—Cut Stone	1	1	30	30	60	30	1
559 Schneid, A. L.	Wauwatosa—Curled Hair and Glue	3	1	12	12	24	12	1
560 Schoenecker, F., Boot & Shoe Co.	538-47 Seventh St.—Boots and Shoes	1	1	104	48	152	9	2
561 Schoenfeldt, John	1017 Cotton Place—Parlor Frames	1	1	7	7	14	7	1
562 Schroeder, John, Lumber Co.	Walnut St.—Lumber Organs	3	1	175	175	350	175	3
563 Schuelke, Wm.	Walnut St.—Church Organs	1	1	9	9	18	9	1
564 Schneppert, Frank J.	575 Second St.—Cooperage	1	1	14	14	28	14	1
565 Schults, Erdmann	Ft. of Clinton St.—Planing Mill, etc.	1	1	14	14	28	14	1
566 Schwab & Giercomb	278-282 Clinton St.—Furnaces, Iron Founders	2	2	140	140	280	140	1
567 Schwab Stamp & Seal Co.	372-4 E. Water St.—Stamped Brass and Metal	1	1	38	13	51	5	1
568 Schwabach, M.	517 519 North—Cigar Boxes	1	1	8	13	21	5	1
569 Schwartzburg, H. A.	426 Ninth St.—Tower Blocks	1	1	5	5	10	5	1
570 Seaman, W. S., & Co.	216 E. Water St.—Parlor Frames	1	1	35	35	70	35	1
571 Seamless Structural Co.	Ft. of Reed St.—Boilers, Gas Tanks, etc.	1	1	80	80	160	80	4
572 Seeboth, A. G.	E. end of Sixth St.—Shoddy	1	1	5	5	10	5	1
573 Seeboth Bros.	Ft. of Lake St.—Cutting Scrap Iron	1	1	15	15	30	15	1

574	Seeboth Bros.	So. Water St.—Sorting Rags and Iron.	1	1	9	13	22	1	35
575	Selick, J.	29 Third St.—Sorting Rags	1	1	2	8	10	1	band
576	Semi-Centennial Mach. & Iron Works	26 Third St.—Machinery	1	1	3	9	10	1	26
577	Senemann, H. G., Harness Mfg. Co.	121-123 Lee St.—Harness, etc.	1	1	14	14	14	1	gas
578	Senmann & Vangerin	124-125 Lee St.—Church Furniture	1	1	21	21	21	1	hand
579	Senderhauf, H.	1037 North St.—Soap	1	1	1	1	1	1	20
580	Sentinel Bindery, The	McGeogh Block—Book Binding	1	1	15	20	35	5	elec.
581	Sentinel Publishing Co.	89-93 Mason St.—Publishers	1	1	150	50	200	2	160
582	Shakman, L. A. Co.	349 E. Water St.—Clothing	1	1	37	1	28	1	45
583	Shaver, Jos., Granite & Marble Co.	Seventh St.—Monuments	2	2	38	38	38	1	15
584	Shaw & Steel Casting Works	So. Ray St.—Steel Castings	2	2	28	28	28	1	35
585	Sheriff & Mfg. Co.	124-130 Broadway St.—Propeller Wheels & M. E.	1	1	25	130	157	40	150
586	Shulz, Geo. A.	Fourth St. and Clybourn Ave.—Paper Boxes	1	1	67	48	17	1	elec.
587	Sidenberg & Hays	351 E. Water St.—Cloaks	1	1	12	12	12	1	40
588	Sieber, Frank	722 E. Water St.—Carpenter	1	1	15	2	17	1	elec.
589	Singer Mfg. Co.	236 W. Water St.—Repairing Machines	1	1	12	12	12	1	35
590	Skobis Bros.	598 Commerce St.—Architectural Iron Works	1	1	10	10	10	1	10
591	Skubol & Schauer	Beecher St.—Carriages and Wagons	1	1	466	2	453	4	320
592	Smith, C. J. & Sons Co.	Clinton & Park Sts.—Hardware Specialties	2	2	11	11	11	1	gas
593	South Side Printing Co.	14 Reed St.—Printing	1	1	8	8	8	1	gas
594	Specialty Mfg. Co., The	203 E. Water St. and Clybourn Ave.—Iron Work	1	1	23	8	36	4	1
595	Stamm, Norman & Duffke	203 E. Water St.—Bedding	1	1	5	5	5	1	80
596	Standard Chemical Works	1st of Fifteenth St.—Chemicals	1	1	5	5	5	1	35
597	Standard Glove Works	206 Broadway—Gloves	1	1	1	1	1	1	5
598	Standard Laundry	14 Ogden Ave.—Laundry	1	1	5	5	5	1	20
599	Standard Oil Co.	Walker St.—Pumping Station	1	1	13	3	16	1	elec.
600	Standard Printing Co.	McGeogh Bldg.—Printing	1	1	100	100	100	3	240
601	Star Tannery	859 North Water—Leather	1	2	14	14	14	1	25
602	Steckles, Adrian	Canal St.—Harness Leather	1	1	8	8	8	1	18d.
603	Steffen, August	433 27th St.—Clears	1	1	18	18	18	1	20
604	Stehling, Chas. H.	Commerce St.—Millwrights	2	2	65	13	65	13	40
605	Stehling & Bloomer	551-555 Tenth St.—Carriages, etc.	1	1	5	5	5	1	60
606	Stillman, E. R.	National Ave.—Cooperage	1	1	24	24	24	1	150
607	Stirn Printing Co.	Montgomery Bldg.—Printing	1	1	249	1	250	17	180
608	Stollenwerk, Weber & Co.	South Milwaukee—Boxes	2	2	65	47	112	2	elec.
609	Stolper, Chas., Cooperage Co.	651-655 Fourth St.—Cooperage	1	1	11	11	11	5	1
610	Stowell Mfg. & Foundry Co.	South Milwaukee—Hardware Specialties	8	8	5	5	5	1	35
611	Straw & Ellsworth Co.	354 Broadway—Fur Goods	1	1	26	54	26	1	35
612	Struck, F.	547 River St.—Coal & Wood	1	1	6	6	6	1	30
613	Sullivan, H. J.	138-140 Seventh St.—Metal Works	1	1	1	1	1	1	1
614	Talish & Co.	114 Mason St.—Printing	1	1	1	1	1	1	1
615	Teweles & Grundmann	128 130 West Water St.—Upholstering, etc.	1	1	1	1	1	1	1
616	Toepfer & Son	80-88 Menomonee St.—Kila Trap Doors, etc.	3	3	1	1	1	1	1
617	Treukamp, F., & Co.	270 Michigan St.—Soap	1	1	1	1	1	1	1

FACTORY INSPECTION—MILWAUKEE—Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.		
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
618 Trinkner, Henry	218 Fowler St.—Wagons	1		5		5		hand	
619 Trupke & Goetter	817 Teutonia St.—Wagons	1		5		5		hand	
620 Uehlein Bros.	Polk and Jefferson—Masters	1		19		19		2	250
621 Ulrich, R. Fuel Co.	Canal St.—Coal	5		120		120		2	225
622 Unit Wash Suspenders Co.	Montgomery Bldg.—Suspenders		1					3	hand
623 Union Refrigerator Transit Co.	Humboldt St.—Repair Work	2		56		56		1	36
624 Usinger, Fred	314 Third St.—Sausage		1	8		8		1	20
625 Van Dyke Knitting Co.	225-229 South Water St.—Knit Goods		1	26	150	176	64	2	140
626 Van Horn, Dan	357 Seventeenth St.—Art Glass Works	1		2		2		1	hand
627 Vaughn Laundry Co.	Montgomery Bldg.—Laundry		1					12	
628 Vetter Mfg. Co.	800-900 Clinton St.—Machinery	5		220	10	230		2	150
629 Vizay, Bornstern & Co.	370 Broadway—Ladies' Cloaks	1		3		3		6	
630 Voigt, Frank	1148 Eighth St.—Brooms	1		5		5		hand	
631 Voss, Herman	372 Milwaukee St.—Book Binder		1					8	hand
632 Wadham Oil & Grease Co.	116-120 Fowler St.—Oil and Grease	1		23	32	55		1	45
633 Wagner, J. G., & Co.	352-358 Sixth St.—Foundry and Iron Works	2		70		70		1	100
634 Wagner, J. G.	514 520 Market St.—Iron Works	2		24		24		1	35
635 Wagner Mfg. Co.	North Milwaukee—Hardware	1		54		54		1	20
636 Wagner, Theo.	1728 Lloyd St.—Wagons	1		4		4		hand	
637 Walimann Mfg. Co.	122-124 Sycamore St.—Shipping Cans, etc.	1		15	7	22		3	
638 Walischmeyer, H. J.	335 Thirtieth St.—Office Fixtures	1		40		40		1	65
639 Walsh, F. A., & Co.	416-418 Fourth St.—Tinware	1		100	3	103	21	1	75
640 Wnarschek, Albert	19 Galeana St.—Wagons	1		6		6		hand	
641 Wnauer, Henry	621-623 Cherry St.—Sorting Rags	2		13	21	34		1	45
642 Wauwatosa Mills	Wauwatosa—Milling		1					35	1
643 Weigel, A.	320-322 Broadway—Bedding	1		27		27		1	60
644 Weiler & Barth Mfg. Co., The	967-973 North Water St.—Machinery	1		30		30		1	gas
645 Weiner Schenk Co.	188 Fifth St.—Brass Founders	1		12		12		13	gas
646 Welns, A. R., & Co.	225 Cedar St.—Brushes	1		13		13		6	gas

Weinberger, A. H., Co.				1	14	4	18	1	gas
Weiss & Schmidt Pottery Co., The				1	24		24		hand
Weissenberger, John				1	11		11		
Weisleder, H.				1	5		6		
Weisman, John				1	9		9		1
Weiser, J. H., & Co.				2	10		10		1
Werbel, L.				1	8		8		1
West B. L. Co.				1	8		8		1
Western Hardware Mfg. Co.				1	21	8	23		
Western Leather Co.				5	175		175	11	80
Western Metal & Gray Iron Mfg. Co.				2	40	334	374	46	240
Western Paying & Supply Co., The				3	95		95	2	75
Western Paper Co.				2	15		15		75
Western Rag & Metal Co.				1	10	21	31	3	gas
Westlake, De La Hunt & Smith Co.				1	2	8	10		
West Side Mfg. Co.				1	12		12		lad.
Wetzel Bros. Printing Co.				2	31		31		1
Whitehead, M. B.			*	1	32	8	30		gas
Whithead & Rademaker Co., The				1	4	13	17	1	
Whiteal, R.				3	16		16		
Wiener, E.				1	40		40	6	
Wiens Brush Co.				1	12		12	6	15
Wilber, John				1	5		5		150
Willer Mfg. Co.				1	90		90	2	180
Williams Bros.				1	42		42	5	50
Winslow Mfg. Co.				1	15		15		20
Wisconsin Bridge & Iron Co.				3	112		112		205
Wisconsin Furniture Co.				2	50		50	6	140
Wisconsin Iron Works				1	42		42		70
Wisconsin Malleable Iron Co.				12	750		750	36	170
Wisconsin Milling Co.				2	8		8		450
Wisconsin Overlaid Co.				1	3	3	6		
Wisconsin Rock Mineral Wool Co.				1	6		6		30
Wisconsin Telephone Co.				1	28		28		
Wobzall, Fred				1	10	30	40	3	band
Woodlager Mfg. Co., The				2	125		125		180
Wood's Steam Laundry				1	6	11	17		1
Wrench, R. F.				1	33	15	48	6	1
Wright, E., Lumber Co.				1	28		28	2	60
Yewdale J. H., & Sons				30	90		90	3	395
Young Churchman, The				1	10		10		
Zeliger, Geo., Co.				1	104	109	213	29	240
Zimmerman, A.				1	2	9	11		60
Zimmerman & Stoltz				1	8		8		1

FACTORY INSPECTION — MILWAUKEE — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.
691 Zohrlant, H., Leather Co.	825 North Water St.—Leather	3	1	360	.....	360	3	6
692 Zwietsch, Otto	Chestnut St.—Soda Fountain Machine	3	1	31	.....	31	.....	1
693 Filat, J. G.	110-112 North Water St.—Coffee & Spice Mill	.....	1	45	.....	45	2	1
694 Reinhart, F. C.	Cudahy—Cooperage	2	.....	12	.....	12	.....	.....
695 Salentine, Christian	255 Virginia St.—Rectifier of Spirits	1	.....	6	.....	6	.....	1
696 Crucible Steel Casting Co.	484 Clinton St.—Steel Castings	1	.....	12	.....	12	.....	1
697 Cutler-Hammer Mfg. Co.	St. Paul Ave.—Rheostals .....	.....	1	60	.....	60	.....	1
	Totals.....	865	480	41,286	8,017	49,303	3,155	859
								72,002

Total horse power.

MILWAUKEE.

Under this head are found the orders affecting the factories in Milwaukee, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table. That is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index

No.

Orders Issued.

- 1 One fire escape; ordered boy under 16 from elevators; swing doors out; guard belt from floor shaft on planer, west end; affidavits for employees under 16 years; discharged fifteen children under age.
 - 2 Keep records of affidavits, also file same; guard set screws on shafting in basement
 - 4 File affidavits and keep record.
 - 5 Swing doors out; fence set screws; guard fly wheel; guard hole and belting of saw and joiner.
 - 7 Swing doors out.
 - 8 Swing doors out; one iron fire escape, outside, to be built on north or east side of building.
 - 9 Guard cut off keys of six lathe pulleys, second floor; fence pulley openings in floor of two boring mills, first floor; erect one or more fire escapes; replace one emery wheel, third floor, by new one.
 - No. 2. Swing door out; fence pulley of vertical boring mill and of planer.
 - No. 4. Box main drive belt.
 - No. 5. Box main drive belt, second floor, and erect fire escape.
 - No. 7. Erect fire escape.
 - No. 11. Fence wheel or cut off key on blower machine, second floor.
 - No. 14. Bars on elevator openings, fifth floor.
 - No. 15. Fire escape; suction device.
 - 10 Fence jack pulley on blower machine, both ends (engine room); swing doors out.
 - 11 Swing doors out; connection from engine room to work shop; guard elevator and elevator shaft.
 - 12 Keep record of affidavits; swing doors out.
 - 13 Keep record of affidavits; swing doors out.
 - 14 Swing doors out.
 - 16 Swing doors out; file affidavits; discharge nine children under age.
 - 17 Swing doors out; cut off twenty-two projecting keys on eleven presses, first floor; fence fly wheel.
 - 18 File affidavits and keep record. Swing doors out.
 - 21 Swing doors out; fence pulley and opening in floor near door.
 - 22 Swing doors out.
 - 23 Swing doors out; provide electric bells between engine room and other buildings.
 - 24 Swing doors out.
 - 25 Swing doors out.
 - 26 Swing doors out; guard set screw or fence fly wheel and guard mangle.
 - 27 Affidavits; provide fans for six blowers in polishing rooms; guard fly wheel; fire escape.
 - 28 Fence lock wheels on planers and provide signal bells.
 - 29 Swing doors out; guard opening to motor pump between bark mill and leech room.
 - 30 Swing doors out.
 - 31 Swing doors out.
 - 32 Swing doors out; file affidavits and keep record of same.
 - 33 Swing doors out; guard elevator opening, second floor.
 - 34 Swing doors out; fire escape; discharged two children under age; file affidavits.
 - 35 Swing doors out.
 - 36 Swing doors out.
 - 37 Swing doors out.
 - 38 File affidavits.
 - 39 Swing doors out; fence wheels and blower machine and fan.
- Two-story brick. Guard set screws on punching machine; three set screws on shafting in machine shop; key on air pump, engine room, all first floor; guard four set screws in shafting on second floor.

- 40 File affidavits and keep record.
- 41 Swing doors out.
- 42 Swing doors out; rail to open stairs.
- 44 Swing doors out.
- 45 Swing doors out; guard belting on band ironer and one set screw on hand ironing machine.
- 47 Swing doors out; file affidavits and keep record.
- 48 Alarm bell between engine room and work shop.
- 49 File affidavits and keep record.
- 50 Swing doors out.
- 51 Swing doors out.
- 52 Swing doors out.
- 53 Swing doors out.
- 54 Swing doors out.
- 56 Swing doors out.
- 57 Swing doors out.
- 58 Swing doors out; fence fly wheel and box lower part of band saw.
- 59 Swing doors out.
- 61 Swing doors out.
- 62 Swing doors out.
- 63 Swing doors out.
- 64 Swing doors out.
- 66 Swing doors out.
- 67 Swing doors out; cooper shop, suction device for heading machines; affidavits.
- 69 Swing doors out.
- 71 Swing doors out.
- 73 Swing doors out.
- 74 Set screws on collars guarded; discharged four children under age; file affidavits.
- 75 File affidavits and keep record; guard elevator opening in basement; swing doors out.
Three-story brick. Provide blowers and suction device in all three pollah-ing rooms.
- 77 File affidavits and keep record; swing doors out.
- 79 Swing doors out.
- 80 Swing doors out.
- 81 Swing doors out.
- 82 Swing doors out.
- 83 Swing doors out.
- 86 Swing doors out.
- 87 Swing doors out; guard and suction device on emery wheels.
- 90 Swing doors out; affidavits and keep record of same.
- 92 Swing doors out; box set screw in shaft of roller; guard fly wheel.
- 94 Swing doors out; order affidavits.
- 96 Box all gearing and openings in floor, second floor; swing doors out.
- 97 Swing doors out.
- 98 Swing doors out. Fence fly wheel of engine.
- 99 Swing doors out.
- 100 Swing doors out.
- 101 Swing doors out.
- 102 Swing doors out; guard fly wheel to engine, both sides; affidavits for employees under 16 years; discharged four children under age.
- 103 Swing doors out.
- 104 Swing doors out.
- 106 Swing doors out; ordered twenty-seven boys between 14 and 16 years to file affidavits and one boy under 14 years discharged; keep affidavits on file and keep record of all.
- 106 Swing doors out.
- 107 Swing doors out.
- 110 Swing doors out.
- 111 Swing doors out.
- 112 Swing doors out; bells between engine room and work room.
- 113 Swing doors out.
- 116 Swing doors out.
- 117 Swing doors out.
- 118 Swing doors out.
- 119 Affidavits and keep record of same; guard cog wheels on sanding machines.
- 120 Swing doors out.
- 122 Suction device in polishing room.
- 123 Swing doors out; fence fly wheel of ice engine.
Three-story frame. Guard elevator openings.
- 125 Swing doors out; bell connection between engine room and work shop.
- 126 Swing doors out.
- 128 Swing doors out; box and cover hole in first floor of main drive belt and pulley, and box and cover gearing on counter-shafting, same floor.
- 130 Guard one side of fly wheel to engine; guard two belts running through first floor; guard all set screws on shafting; discharged one child under age; file affidavits.
- 131 Swing doors out; file affidavits and keep record.
- 132 Swing doors out.

- 133 Swing doors out; code of signals between work shop and engine room; guard to belt on sausage cutter on fourth floor.
One-story brick. Guard to rope power transmitter in engine room.
- 134 File affidavits and keep record of same; swing doors out.
- 135 Swing doors out.
- 139 Fans and suction devices in polishing room.
- 149 Swing doors out.
- 142 Affidavits; communication between engineer and work rooms; swing doors out.
- 113 Swing doors out.
- 141 Swing doors out; guard fly wheel of engine.
- 115 Swing doors out.
- 148 Swing doors out; better ventilation in room where ink is made, by providing fan to carry away steam.
- 147 Swing doors out; fence fly wheel of engine and dynamo.
- 149 Swing doors out.
- 111 Swing doors out.
- 150 Swing doors out.
- 151 File affidavits and keep record of same; swing doors out.
- 152 Swing doors out.
- 155 Swing doors out.
- 156 Swing doors out; file affidavits and keep record of same; guard main drive belt on all floors.
- 153 Swing doors out; file affidavits and keep record of all between 14 and 16 years of age.
- 150 Swing doors out.
- 160 Guard fly wheel of engine.
- 161 Swing doors out.
- 162 Swing doors out.
- 171 Swing doors out.
- 175 Swing doors out.
- 163 Swing doors out; clean closet vault or provide for new one.
- 167 Swing doors out.
- 161 Swing doors out; fence fly wheel of engine.
- 169 Swing doors out.
- 171 Swing doors out.
- 111 Swing doors out.
- 173 Swing doors out.
- 171 Swing doors out.
- 155 Swing doors out; discharged seven children under age; file affidavits.
- 176 Swing doors out; iron railing rear end of fly wheel, south east end; provide blowers and fans in room where polishing wheels are used.
One-story brick. Clean and disinfect sink.
One-story frame. Disinfect and keep closet clean.
- 177 Swing doors out; guard opening of elevator shaft.
- 179 Swing doors out.
- 111 Swing doors out.
- 192 Swing doors out; file affidavits and keep record.
- 194 Swing doors out.
- 185 Swing doors out; provide guards for elevator on each floor.
- 158 File affidavits and keep record of same; hard rails on stairs, third floor, and stair opening second to third floor; swing doors out.
- 197 Swing doors out.
- 189 File affidavits and keep record.
- 193 Swing doors out; affidavit for one girl under 16.
- 191 Swing doors out.
- 191 Swing doors out; fence fly wheel.
- 195 Swing doors out.
- 193 Swing doors out; discharged three under age; suction device.
- 195 Guard set screws or force balance wheel of engine and guard all set screws on shafting in lathe department.
- 196 Swing doors out.
- 197 Swing doors out; guard fly wheel to engine on both sides.
- 193 Swing doors out.
- 190 Swing doors out; twenty-nine boys and six girls between 14 and 16 years to file affidavits; guard fly wheel; connection between engine room and workshop; extend fire escape to roof; repair elevator shaft.
- 201 Swing doors out.
- 201 Swing doors out.
- 203 Swing doors out.
- 205 Guard set screws on shafting; fence fly wheel on small engine; file affidavits and keep record.
- 204 Swing doors out.
- 207 File affidavits and keep record; swing doors out.
- 208 Swing doors out; suction device in buffing room.
One-story brick. Device for purifying the air.
Two-story wood. Guard belt through second floor; discharged six children under age; affidavits.
- 210 Swing doors out; file affidavit for one boy and keep record.
- 211 Swing doors out.
- 212 Swing doors out.
- 213 Swing doors out.

- 214 Swing doors out; keep record of affidavits.
- 215 Swing doors out.
- 216 Swing doors out.
- 217 One-story brick. Guard all set screws on overhead gearing.
- 218 Discharged four children under age; file affidavits.
- 219 Swing doors out; fence fly wheel.
- 219 Swing doors out; discharged three under age.
- 220 Swing doors out.
- 221 Swing doors out.
- 222 Guard and provide suction device for emery wheels. Swing doors out.
- 223 Swing doors out.
- 224 Swing doors out.
- 225 Swing doors out.
- 226 Swing doors out.
- 227 Swing doors out.
- 228 Discharge one boy under 14 years; ordered thirteen boys to have affidavits sworn to.
- 229 File affidavits and keep record; swing door out; guard north end of fly wheel with wire netting.
- 230 Swing doors out.
- 231 Swing doors out; rail to open stairs.
- 232 Swing doors out.
- 233 Swing doors out.
- 235 Swing doors out.
- 236 Swing doors out.
- 237 File affidavits and keep record; swing doors out.
- 238 Swing doors out.
- 239 File affidavits and keep record; guard keys on two printing presses.
- 240 File affidavits and keep record; swing doors out; fence fly wheel of engine.
- 241 Swing doors out.
- 242 Swing doors out.
- 243 File affidavits and keep record; whitewash shop.
- 244 Swing door out; guard hole in floor, also belt.
- 245 Swing doors out.
- 246 Swing doors out.
- 247 Swing doors out; affidavits.
- 249 Swing doors out.
- 250 File affidavits and keep record.
- 251 Swing doors out.
- 253 Swing doors out; guard gear wheel to punch on fourth floor; affidavits.
- 255 Swing doors out.
- 256 Swing doors out.
- 257 Swing doors out.
- 258 Swing doors out; guard set screw on balance wheel of engine; one fire escape.
- 259 File affidavits and keep record.
- 260 Swing doors out; file affidavits and keep record.
- 261 Swing doors out; provide means for better ventilation by puffing in fans in rooms where emery wheels are.
- 262 Swing doors out.
- 263 Keep record of affidavits; keep floor of polishing room clean; discharge two boys; swing doors out.
- 264 One-story brick. Seats for females.
- 264 Swing doors out.
- 265 File affidavits and keep record; guard key on air pump engine in engine room; suction device and blower in polishing room; swing doors out.
- 266 Swing doors out.
- 267 Swing doors out.
- 268 Swing doors out.
- 269 Swing doors out; affidavits.
- 270 Swing doors out.
- 271 Swing doors out.
- 272 Swing doors out; box or fence fly wheel of engine.
- 273 Swing doors out.
- 273 No. 10. Fence fly wheel of engine and generators and belt from engine to generator.
- 274 Swing doors out.
- 275 Swing doors out.
- 276 Swing doors out.
- 277 Ordered boy under 16 years of age off the elevator as operator, and if retained to file affidavit.
- 278 Swing doors out.
- 279 Swing doors out; fence fly wheel of engine; box gearing and holes and belting on mangle and ironing machines.
- 280 File affidavit and keep record; fence fly wheel.
- 281 Swing doors out.
- 282 File affidavits and keep record.
- 283 Swing doors out.
- 284 Swing doors out.
- 285 Swing doors out.
- 286 File affidavits and keep record; swing doors out; fence fly wheel both ends; guard set screws on shafting in engine room; discharge child under age.
- 287 Guard set screws and gears to soap cutchers, 2d floor; guard set screws on line and countershafts, also gear on top of soap cooler, also filling hole next to No. 4 kettle, 3d floor; guard set screws and gear to soap cutcher, also belt from countershaft to cutcher, 4th floor; guard two filling holes to soap kettles, 5th floor.

- 288 Swing doors out.
 289 Swing doors out.
 290 File affidavits and keep record; swing doors out.
 291 Swing doors out.
 292 Swing doors out; five guards to balance wheel on washing machines in basement; 1 set screw and 1 set collar on line shaft in basement; 2 set screws on counter shaft to flacking drums; 4 set screws on counter shaft to wool washer, in basement. Fourth floor, 2 set screws on counter shaft running brush machines; 2 set screws on short main shaft; 1 set screw on main shaft; 2 set screws on short main shaft, south side. Third floor, 1 set screw short main shaft, east side; 2 set screws on counter shaft to elevator. Second floor, 1 set screw main shaft; 2 set screws on counter shaft, west end; 2 set screws on counter shaft, east end; 2 set screws on short main shaft, north end.
 North building. Third floor, 10 set screws on counter shaft; 2 set screws main shaft, west end. Fourth floor, 2 set screws main shaft; 2 set screws on counter shaft to elevator; file affidavits.
- 293 Swing doors out.
 294 Swing doors out; fence balance wheel of engine in basement.
 295 Swing doors out.
 296 Swing doors out.
 297 Swing doors out; platform for fire escape on second floor.
 298 Swing doors out.
 299 Fence fly wheel; doors swing out.
 300 Swing doors out.
 301 Swing doors out.
 302 Keep record of affidavits; swing doors out.
 304 File affidavits and keep record; swing doors out.
 306 File affidavits and keep record; swing doors out.
 306 Swing doors out.
 307 Guard fly wheel.
 308 File affidavits and keep record; swing doors out.
 309 Swing doors out.
 310 File affidavits and keep record; swing doors out.
 311 Swing doors out; guard or cut off key on fly wheel of engine.
 312 Swing doors out.
 313 Swing doors out; elevator well guarded; fence fly wheel.
 314 Swing doors out.
 315 Swing doors out.
 317 Swing doors out; fence fly wheel of both engines.
 316 Swing doors out.
 319 Swing doors out; suction device.
 320 Swing doors out.
 321 Swing doors out.
 322 Swing doors out; whitewash shop.
 323 Guard lower part of band saw.
 324 Swing doors out; hand rolls on stairs.
 325 Swing doors out.
 326 Swing doors out; suction device and fans in polishing room.
 327 Swing doors out; suction device in polishing room.
 328 Swing doors out; guard set screws on line and countershafts on first floor; file affidavits.
 329 Swing doors out.
 330 Swing doors out; fence drive belt on shaper and band saw; box gearing on sand paper machine and fence belt on lathe, all on second floor.
 331 Swing doors out.
 332 Swing doors out; fence fly wheel of engine.
 333 File affidavits and keep record; swing doors out.
 334 Swing doors out; fence fly wheel and emery wheel and provide for better ventilation in buffing room; guard and suction device on emery wheels; discharged children under age; affidavits.
 335 Nineteen boys between 14 and 16 years ordered to file affidavits and record kept.
 Three-story brick. Three boys under 14 years ordered discharged and six ordered to file affidavits and keep record of all between 14 and 16 years; guard elevator well on each floor, connection from engine room to factory.
- 336 Swing doors out.
 337 Swing doors out.
 338 Swing doors out; guard set screws on shafting on second floor.
 339 Swing doors out; guard set screws on line shaft in basement.
 340 Swing doors out.
 342 Swing doors out.
 343 Swing doors out.
 345 Swing doors out.
 346 Swing doors out.
 347 Swing doors out; guard fly wheel to engine in basement.
 348 Swing doors out; fire escape; affidavits for three under 16.
 349 Swing doors out. First floor, two set screws on main shaft; two set screws on counter shaft; two set screws on shaft to elevator. Second floor, two set screws on end of main shaft. Fourth floor, twelve screws on counter shaft, three on main shaft.
 Engine room. Guard one side of fly wheel.
- 351 Swing doors out.

- 352 Swing doors out.
- 353 First floor, arm of engine guarded; two set screws to counter shaft in split room; two set screws counter shaft south side of glue room; two set screws small counter shaft north side; four set screws on small shaft, center of glue room; seven set screws on shafts first floor east of glue room; three set screws counter shaft to dynamo; two set screws counter shaft to boring machine. Loose pulley on counter shaft to planer of line. Second floor, two set screws on counter shaft, north side; one set screw on line shaft in center. Third floor, box belt and pulleys on each side of sanding machine. Fourth floor, repair elevator gate.
- 354 Fire escape; file affidavits.
- 355 Swing doors out; fence fly wheel and guard two set screws, first floor.
- 356 One-story brick. Fence both wheels of engine; affidavits.
- 356 Swing doors out; fence fly wheel on blower engine; disinfect closet.
- 357 Swing doors out.
- 359 Cut off gate on one freight elevator at least two feet, so a person can reach guy rope without lifting gate.
- 360 Fence fly wheel of engine and balance wheel on air pump.
- 361 Swing doors out; fence fly wheel and guard large band saw.
- 362 Swing doors out; provide device for taking dust from emery wheels, also guard same; discharged nineteen children under age.
- 363 Four fire escapes and suction device for all polishing, buffing and emery wheels, also guards on wheels; swing doors out.
- Three-story brick. Guard set screws.
- 364 Swing doors out; cut off key on fly wheel in basement and gearing on paper cutting machine boxed.
- 365 Swing doors out.
- 366 Swing doors out.
- 368 Guard set screws on press.
- 369 Swing doors out.
- 370 Ordered seven affidavits to be filed and record kept of all; whitewash both rooms, scrub floor and keep workshop clean.
- 371 File affidavits and keep record; swing doors out.
- 373 Swing doors out.
- 374 Swing doors out.
- 375 File affidavits and keep record; discharge one boy under 14 years.
- 376 Swing doors out.
- 377 Swing doors out.
- 380 Swing doors out; fans and suction device; clean floor in polishing room; bell connection between engine room and work room.
- 381 File affidavits and keep record; swing doors out.
- 382 Provide bells between engine room and workshop; guard gear to punch; two gears to shears; fly wheel to plate shears; rail rollers walks; guard pulley; fly wheel to engine; fly wheel to compressors; fly wheel to dynamo.
- 388 Swing doors out; guard belt on small planer, first floor, east end; counter shaft to shaper on second floor; protect elevator shaft in basement.
- 384 Swing doors out.
- 386 Swing doors out; file affidavits and keep record.
- 387 Fence fly wheel and balance wheel on engine in basement and hand rails on stairs to basement; swing doors out.
- 388 Swing doors out.
- 389 Swing doors out.
- 391 Swing doors out; fence fly wheel of engine; guard set screws on shafting and guard band saws.
- 392 Swing doors out; affidavits.
- 393 Swing doors out.
- 400 Swing doors out; suction device in buffing room.
- 401 Swing doors out; file affidavits and keep record.
- 402 Swing doors out.
- 403 Swing doors out; fire escape.
- 404 Swing doors out; keep guard chains to four elevators properly hooked; fence fly wheel.
- 406 Swing doors out; file affidavit for one boy and keep record of all.
- 407 Swing doors out.
- 408 Swing doors out. No. 3, provide suction device and fans for emery wheels, and if possible for some device to prevent hammer from falling un-awares. No. 7, fence fly wheel of high speed engine. No. 9, fence drive belt, second floor.
- 410 Swing doors out.
- 411 Swing doors out.
- 412 File affidavits and keep record.
- 413 Swing doors out.
- 414 File affidavits and keep record of same; swing doors out; guard key on stove planer; put closets in better condition.
- 415 Swing doors out; fence fly wheel.
- 416 Suction device for polishing, buffing and emery wheels; guard set screws in shafting; hoods for ten hard coal furnaces.
- 418 Swing doors out.
- 419 File affidavits and keep records; swing doors out.
- 420 Swing doors out.
- 421 File affidavits and keep record.
- 422 Swing doors out.

- 423 Swing doors out.
- 424 Swing doors out; file affidavits and keep record.
- 425 Swing doors out.
- 426 Fence or box gearing on shaper gearing and saw on band saw; gearing on planer; guard or fence fly wheel of engine, both ends and shaft; box hole and drive belt on band saw, second floor.
- 427 Swing doors out.
- 431 Swing doors out; fence one end of fly wheel on engine; bell communication between workshops and engine room.
- 432 Swing doors out; bell communication between workshop and engine room.
- 433 Swing doors out; fasten and strengthen, repair or replace face plate on joiner, and fence fly wheel of engine; provide bells between engine room and work room.
- 434 Swing doors out; fence fly wheel; file affidavits.
- 436 Strengthen platform of elevators and automatic platform on top; swing doors out.
- 437 File affidavits and keep record; fence fly wheel and balance wheel of engine and belt on dynamo in engine room and provide platforms and walk with board rails along shafting and pulleys (overhead) in boiler and engine room.
- 438 Swing doors out; affidavits.
- 439 Swing doors out.
- 440 Swing doors out; guard belt to box embosser and paster on fourth floor.
- 441 Provide bells between engine room and all floors where machinery is used. Better ventilation in composing room.
- 442 Hand rails on stairs.
- 443 Swing doors out.
- 444 Swing doors out; fence fly wheel; guard three set screws; box four chain belts on conveyor and drive belts on all floors.
- 445 Swing doors out.
- 446 Swing doors out.
- 447 Guard set screws on small band saw; box drive pulley on boring machine, second floor; guard drive pulleys on two large band saws, first floor. One-story brick. Fence fly wheel; swing door out.
- 449 Swing doors out; code of signals from machine room to engine room.
- 450 Swing doors out; file affidavit for one boy 15 years old, and keep record of all.
- 451 Swing doors out.
- 452 Swing doors out.
- 453 Swing doors out; guard elevator shaft at run way, first floor.
- 454 File affidavits for four boys between 14 and 16.
- 455 Swing doors out; countersink or guard set screws on collars to line or counter shafts through entire plant. Five-story brick. Guard large spur gear and belt to power press or dyes (3), on first floor south side; affidavits.
- 456 Swing doors out; guard five set screws on shafting in basement and on third floor; discharged six children under age; fence fly wheel; guard gearing on paper machine.
- 457 Swing doors out; provide one iron fire escape and stand pipe on west end, also one iron fire escape and stand pipe on the N. E. front, to be erected in ninety days from April 19, 1899; discharge 34 children under age; affidavits.
- 458 Swing doors out; discharged eleven children under age; file affidavits.
- 459 Swing doors out; erect fire escape; guard elevator shaft, first floor.
- 460 Swing doors out.
- 461 Swing doors out.
- 462 Swing doors out.
- 463 Guard set screws on shaft over motor on fourth floor.
- 464 Disinfect closet on all floors; suction device.
- 465 Swing doors out.
- 466 Swing doors out.
- 467 Replace present railing around fly wheel by a more safe and substantial one.
- 468 Swing doors out.
- 469 Swing doors out.
- 470 Swing doors out; proper communication between work room and engineer.
- 471 Swing doors out.
- 472 File affidavits and keep record.
- 473 Swing doors out; file affidavits and keep record.
- 474 Fence and widen walks over all grain bins; swing doors out. No. 3. Fence or box main drive belt on all floors.
- 475 Fence fly wheel of engine in basement.
- 476 First floor, guard a 11 set screws on shafting; guard crank to engine, north side. Machine shop, guard set screws on shafting. Wood working department, Guard set screws on shafting. Second floor, guard set screws on shafting. Third floor, guard set screws on shafting. Fifth floor, guard set screws on shafting; guard set screws on collars, also on pulley belt to idler. Two-story brick. Guard set screws on shafting to wool picker on second floor. Carding room, guard set screws to shafting to felt press. One-story brick. Guard set screws to counter shaft.
- 477 Swing doors out.

- 478 File affidavits and keep record; discharge one boy under 14 years; guard set screws on shafting, projecting keys on five punching machines and fence wheels on five other punching machines; disinfect and clean closet.
- 480 Swing doors out.
- 482 Swing doors out.
- 483 Swing doors out; fence opening of stairway and provide hand rails on same; fence opening over boiler, second floor.
- 484 File affidavits.
- 486 Swing doors out. No. 4, guard drive belt and box holes and fence drive belt and pulley, eleventh floor.
- No. 7, Cap set screws overhead shafting.
- No. 12, Cap all set screws and projecting keys on shafting and guard all machines first and second floor.
- No. 13, Cap seven set screws overhead shafting, second floor.
- No. 19, Box main drive belt, fifth floor.
- No. 26, Swing doors out; file affidavits.
- 487 Guard fly wheel.
- 488 Swing doors out; guard gearing on ironing machine and set screws countersunk or guarded.
- 489 Swing doors out; affidavits for boy under 16 years.
- 490 Swing doors out; guard set screws on shafting, also ten-inch belt running through second floor.
- 491 Swing door out; guard band saw; cap set screws.
- 492 Swing doors out.
- 493 Swing doors out.
- 494 Swing doors out.
- 496 File affidavits and keep record; swing doors out.
- 498 Guard fly wheel, also gear to press machine.
- 499 Swing doors out; put railing around hole in first floor, over boiler.
- 500 File affidavits for twelve boys between 14 and 16 years; swing doors out. Leach house. Guard gear wheel, third floor; fence walks over cooler east and west side, same floor; cut off keys or fence pulleys and guard set screws in shafting, second floor.
- Six-story brick. Provide alarm bells between engine room and shop.
- Five-story brick. Box belt on blacking machine; guard belt to dynamo, first floor.
- 502 Provide alarm bells between engine room and workshop.
- One-story brick. Extend walk to jack shaft pulley, near window; widen platform or walk and fence same side and end; signal bells from engine room to beam houses and pump room.
- 504 Swing doors out; affidavits; discharged six children under age.
- 506 Swing doors out; guard fly wheel; guard seven set screws on shafting in basement; file affidavits.
- 507 Swing doors out.
- 508 Swing doors out.
- 509 Swing doors out.
- 510 Swing doors out; put in fans and suction device on polishing machines.
- 511 Guard set screws to collar on line shaft in sausage kitchen; swing doors out; fire escape and stand pipe.
- 512 Swing doors out; file affidavits and keep record; provide suction device and fans in polishing rooms.
- 514 Swing doors out; guard belts and pulleys to sander machine; lower end of band saw; set screws to emery wheel shaft; guards on two emery wheels.
- 515 Swing door out; guard drive belt on second floor.
- 516 Swing doors out; fence or box gearing on two sticker machines, also bell connections between engine room and workshop.
- 517 Swing doors out; fence fly wheel and provide bells between engine room and work rooms.
- 520 Swing doors out.
- 521 Swing doors out; ordered four boys under 14 years discharged.
- 522 Swing doors out; affidavits.
- 523 Swing doors out.
- 524 Swing doors out.
- 525 Swing doors out.
- 527 Swing doors out; guard gearing on mangel machine.
- 528 Swing doors out.
- 530 Guard large drive belt on first floor; same belt on one side on second floor, top; guard four large belts running close to floor in top story.
- 532 Swing doors out; affidavits.
- 533 Swing doors out; provide fans to carry off the dust on first and second floors of paint mill.
- 534 Swing doors out.
- 535 Swing doors out.
- 536 Swing doors out.
- 537 Swing doors out.
- 538 Swing doors out.
- 539 Swing doors out; guard elevator shaft third floor and basement; erect fire escape.
- 540 Swing doors out.
- 541 File affidavits and keep record; swing doors out; guard key on molding press.
- 542 File affidavits and keep record; swing doors out.

- 543 Swing doors out; guard wheel pit and driving pulley in engine room; ordered affidavits for employees under 16 years; ordered closet on outside near engine room removed or placed in sanitary condition.
Four-story brick. Guard elevator on first floor; discharged seventeen under age.
- 544 Swing doors out; cover holes and box drive belts on second floor.
- 545 Swing doors out.
- 546 Swing doors out.
- 547 Swing doors out; railing on stairs to pattern shop and guard set screws in shafting in machine and pattern shop.
One-story frame. Guard all set screws in shafting and fence fly wheel of engine at both ends.
- 548 File one affidavit; swing doors out; guard elevator well in basement.
- 549 File affidavits and keep record; suction device and fans in polishing rooms; swing doors out.
- 551 Swing doors out.
- 552 Swing doors out.
- 553 File affidavits and keep record.
- 554 Swing doors out.
- 555 Swing doors out; discharged two children under age; affidavits.
- 557 Swing doors out.
- 559 Swing doors out.
- 560 Swing doors out; file one affidavit and keep record.
- 562 Box drive belt and pulley on rip saw; guard key on planer; widen walks overhead near shafting; swing doors out.
Two-story brick. Fence fly wheel; fence main drive belt, second floor.
- 563 Swing doors out.
- 564 Swing doors out.
- 565 Box wheels and gearing on feed end and both sides of two stickers and two planers.
- 566 Swing doors out; keep closet in better sanitary condition and enlarge same, and if possible remove from present position, further away from work room; file affidavits.
- 567 Swing doors out.
- 568 Swing doors out.
- 569 File affidavits and keep record; swing doors out; discharged one child under age.
- 570 Swing doors out.
- 571 Swing doors out; fence wheels of hydraulic pumps.
- 572 Swing doors out.
- 573 Hand rails on stairs from landing of first to second floor of two-story frame building.
- 575 Swing doors out.
- 576 Swing doors out.
- 577 Swing doors out.
- 578 Swing doors out.
- 580 File affidavits and keep record.
- 582 Swing doors out.
- 583 Swing doors out.
- 584 Swing doors out.
- 585 Swing doors out.
- 586 Swing doors out; open wells of two elevators in basement guarded; two set screws on line shaft, two on each counter shaft that runs elevators, two on counter shaft to paper machine, two on counter shaft to baling press in basement; two set screws on counter shaft to paper cutter on third floor; guard key in fly wheel on job press, second floor; file affidavits; discharged twenty-four children under age.
- 587 Swing doors out.
- 588 Swing doors out; file affidavits and keep record; bell between engine room and workshop; guard key on balance wheel of engine.
- 589 Swing doors out.
- 590 Swing doors out.
- 592 First floor, Fork department. Guard all set screws on shafting; gear on drawing machine, on right side. Second floor. Guard all set screws on shafting in machine shop; all set screws on tube cutting machine, and on shafting. Third floor, Stamping department. Guard set screws on all shafting and machine, also set screws on loose pulley to press No. 66. Fourth floor, carriage department. Guard set screws on shafting and machine. Screw machine department. Guard set screws on shafting and on all machinery. Fifth floor. Set screws on shafting and machinery. Rim department. Set screws on all shafting; guard fly wheel to dynamo engine in dynamo room; provide guards and suction device for emery wheels in polishing room on fourth floor.
- Grinding building. Second floor. Guard two set screws on counter shaft to hoist; new cable or rope to hoist; guard south side of well to hoist; guard set screws to counter shaft to glueing machine in belt room; new steps to inside stairway, between first and second floors.
- "Pickling" and Carriage Works. First floor. Guard set screws on shafting on punching machine. Spring department. Guard set screw on inside pulley on end of main shaft; swing doors out.
- Tinning department. Guard set screws on shafting.
- Blacksmith shop. Guard set screws on shafting.
- 593 Swing doors out.

- 594 File affidavits and keep record; fans and suction device in polishing room.
 595 Fence fly wheel and guard main drive belt.
 597 Swing doors out.
 598 Swing doors out.
 599 Swing doors out.
 601 Swing doors out.
 602 Swing doors out.
 603 Swing doors out; file affidavits and keep record.
 604 Swing doors out.
 605 Swing doors out.
 606 Swing doors out.
 609 File affidavits and keep record; swing doors out; discharged three under age.
 610 File affidavits and keep record; swing doors out.
 One-story frame. Fans and suction device in emery wheel room.
 611 Swing doors out; affidavits for two people under 16 years.
 612 Swing doors out.
 613 Swing doors out.
 615 Swing doors out; fire escape.
 616 Swing doors out; provide bells between engine room and shop; fence fly wheel of engine and discontinue using the emery wheel.
 617 Swing doors out.
 620 Swing doors out; proper communication between rooms with machinery and engineer.
 622 File affidavit and keep record; discharge boy.
 624 Swing doors out.
 625 Bell between engine room and work room; discharged fourteen under age.
 626 Swing doors out.
 628 Swing doors out.
 One-story frame. Clean sink, disinfect, enlarge and put in such condition fit to be used.
 630 Swing doors out.
 631 Swing doors out; affidavits for eight employees under 16 years.
 632 Swing doors out; file affidavits and keep record.
 633 Swing doors out; suction devices and fans in polishing rooms.
 634 Swing doors out.
 635 Swing doors out.
 637 File affidavits and keep record; swing doors out.
 638 Swing doors out.
 639 Keep record of affidavits; swing doors out; fence fly wheel; disinfect closet.
 641 Swing doors out.
 642 Swing doors out.
 643 Swing doors out; affidavit for one boy under 16.
 644 Swing doors out; gate to elevator shaft, first floor.
 645 Swing doors out; file affidavits and keep record; fan and suction device in polishing room.
 646 File affidavits and keep record; guard pulley and fly wheel to engine.
 647 Swing doors out; file affidavits and keep record; swing door out at foot of stairway; fire escape.
 649 Swing doors out.
 650 Swing doors out; file affidavits and keep record.
 651 Swing doors out.
 653 Swing doors out; cap set screws on shafting, basement; disinfect closet.
 654 Swing doors out.
 655 Swing doors out; affidavit for errand boy under 16.
 656 File affidavits and keep record; swing doors out; disinfect closet vault; fence fly wheel; discharge two children under age.
 657 Fence fly wheel of three engines and erect one or more fire escapes; swing doors out.
 658 File affidavits for two boys and keep record of all; swing doors out; disinfect and put closet in better sanitary condition; box drive belt on second floor.
 659 Swing doors out; fence fly wheel of engine.
 659 File affidavits and keep record; swing doors out.
 661 Swing doors out.
 661 Swing doors out.
 663 Fence fly wheel and box wheels in sanding room; swing doors out.
 664 Swing doors out; affidavit for one boy.
 665 Swing doors out.
 667 File affidavits and keep record; swing doors out.
 668 File affidavits and keep record; swing doors out.
 668 File affidavits and keep record; swing doors out.
 671 Fence fly wheels of five presses; guard set screws in shafting in basement; disinfect closet in basement.
 673 Needs for blacksmith forges and gas furnaces; swing doors out.
 Two-story wood. Ex ra plank and railing to roller's walk in machine shop; box drive pulley to engine, also all set screw covered; plank walk to transmission pulley.
 674 File and keep record of affidavits; connection from engine room to factory. Ordered holes in floor covered; guard set screws on shafting of fly wheel to engine; guard belt to shaper, also all in running gears.

- 675 Swing doors out; box lower part of band saw, second floor; box hole and wire cable, third floor; signal bells between engine room and work room. Two-story brick. Hand-rails on stair and opening; bells between engine room and shop; fans and suction device in polishing rooms, basement and first floor.
- 676 Swing doors out.
One-story frame. Boys to file affidavits.
- 677 Swing doors out.
- 678 Swing doors out.
- 679 Swing doors out; fence fly wheel of engine.
- 680 Swing doors out.
- 681 Swing doors out; two girls discharged; three file affidavits, and keep records of all; whitewash shop.
- 682 Swing doors out.
- 683 Swing doors out.
- 684 Swing doors out; fence fly wheel of engine; file affidavits and keep record; discharge two boys 13 years of age.
- 685 Signal bells from shop to engine room; guard gearing on sticker machine; guard set screws; cover wheels and box gearing on sanding machine; file affidavits.
- 686 Swing doors out; guard fly wheel in basement on both sides; guard all set screws on line and counter shafts in basement; guard set screw to fly wheel on paper cutter on fourth floor; fire escape on west side.
- 687 Swing doors out.
- 688 Swing doors out; discharge five children under age; file affidavits.
- 689 Swing doors out.
- 690 Swing doors out; fence fly wheel.
- 691 Swing doors out.
- 692 Swing doors out.
- 693 Swing doors out.
- 694 Swing doors out.
- 695 Swing doors out.

The following summaries show, for the factories in Milwaukee, the number in each of the different classes of objects examined, the conditions of same, and the number of orders in each case, as reported by the inspectors during the period covered. A close study of these facts will reveal not only the nature and scope of our duties, but the condition, as a whole, of the factories included with respect to the factory laws.

MILWAUKEE.

- 1 Establishments: Number inspected, 697.
- 2 When established: Five years ago or less, 204; 10 years ago but more than 5, 117; 15 years ago but more than 10, 111; more than 15 years ago, 265.
- 3 Buildings: Number inspected, 1,345.

Kind and height.	1 story.	2 stories.	3 stories.	4 stories.	5 stories.	6 stories.	7 stories.	8 stories.	9 or more stories.	Totals.
Wood	14	191	32	5	5	2	2	3	5	429
Brick	203	238	149	94	70	49	23	3	5	838
Stone	1	4	2	1	1	3	1	1	1	11
Iron	21	13	6	8	6	2	3	3	8	67
Totals	419	446	189	111	82	49	30	6	13	1,345

- 4 Hours of labor daily, date of inspection: 596 firms, 10 hours; 20 firms, 9½ hours; 46 firms, 9 hours; 1 firm, 8½ hours; 22 firms, 8 hours; 1 firm, 11 hours; 4 firms, 12 hours.
- 5 Number of establishments in operation, 689; idle, 8.
- 6 Number of persons employed: Male, 41,286; female, 8,017; total 49,303. Under 16 years, 3,155. Under 14 years, without permit, 481; with permit, 250.
- 7 Number of firms requiring night work of children, 2.
- 8 Number of children affected by orders, 3,638.
- 9 Boilers: Total number, 859; number insured, 666; number of firms using steam for motive power, 407; electricity, 39; gas, 41; water, —.
- 9 Persons employed on each floor: Basement, 2,214; first, 24,326; second, 10,765; third, 6,415; fourth, 2,663; fifth, 1,241; sixth, 361; seventh, 126; eighth, 57.
- 10 Fire escapes: Total number, 363; number in good or fair condition, 332. Number of buildings three or more stories employing 25 persons or more not provided with escapes, 28.
- Orders affecting fire escapes, 58.

- 11 Standpipes and automatic sprinklers: Number of buildings having outside standpipes, 322; inside, 235; number having hose connections, 364; number of buildings provided with automatic sprinklers, 119; number of orders, 2.
- 12 Stairways: Number between each floor—basement and first, 428; first and second, 830; second and third, 492; third and fourth, 289; fourth and fifth, 174; fifth and sixth, 73; sixth and seventh, 16.
Number of stairways enclosed, 1,133; outside stairways, 192; number of orders affecting stairs, 14.
- 13 Elevators: Number, 475; number with cables in good or fair condition, 439; Number of automatic doors, 100; swinging, 55; sliding, 116; bars, 116; number with different doors other than automatic on each floor, 35; number operated by boy under 16 years, 3; number of orders, 39.
- 14 Communication between work rooms and engineer: Number of buildings where such connections are necessary, 637; number provided with the same, 609; number of each kind used, electricity, 463; tubes, 22; whistles, 24; number of connections ordered, 28.
- 15 Machinery: Number of machines or parts of machinery in the various buildings affected by orders issued, 466; number of orders, 466.
- 16 Emery wheels: Number, 592; number in fair condition, 314; average speed, 1,304; number provided with guards, 27; suction devices, 26; number of guards and suction devices ordered, 225.
- 17 Hoists: Number, 153; number in good or fair condition, 126; orders affecting same, 27.
- 13 Vats, pans, etc.: Number, 960; number provided with safety guards, 660; guards not necessary, 297; number of orders issued affecting them, 3.
- 19 Doors or exits: Basement, 491; number first floor, 3,545; number swinging in, 2,310; out, 662; both, 14; slide, 1,060; number of buildings in which doors are fastened during working hours as not to permit of ready egress, 1; number of orders affecting doors, 2,311.
- 20 Sanitary condition: Number of rooms poorly ventilated or overcrowded, 12; number of rooms mechanically ventilated, 209; number of closets, 1,914; number of closets in fair or good condition, 1,693; number of orders affecting sanitary condition, 233.
- 21 Number of buildings in which explosives or inflammable compounds are kept, 9; orders issued, 0.
- 22 Number of buildings in which seats are provided for females, 236; number of orders affecting this, 1.
- 23 Number of accidents, 262.
- 24 Number of buildings in which orders were issued, 586. Total number of orders issued, 7,146.

APPLETON.

The following table, covering several pages, shows for each of the 48 factories in Appleton, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Powers," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION - APPLETON.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Number.	Total horse power.
1 Appleton Chair Co.	Chairs and Rockers.	1	1	68	4	72	2	105
2 Appleton Electric Laundry	Laundry	1	1	3	4	7		elec.
3 Appleton Electric Light & Power Co.	Electric Power for Cars.	1	1	9	4	13		wat.
4 Appleton Electric Light & Power Co.	Power House.	1	1	4	4	8		wat.
5 Appleton Evening Crescent	Printing and Publishing	1	1	6	4	10		elec.
6 Appleton Hay Tool Co.	Hay Tools.	1	1	5	4	9		wat.
7 Appleton Knitting Co.	Knit Goods.	1	1	1	28	29	1	20
8 Appleton Machine Co.	Paper Machinery	2	2	60		60		wat.
9 Appleton Paper & Pulp Co.	Pulp	2	2	7		7		wat.
10 Appleton Pickle Co.	Sauer Kraut and Pickles	1	1	4	12	16	1	20
11 Appleton Post, The	Printing and Publishing	1	1	8	2	10		elec.
12 Appleton Printing & Book Co.	Printing and Publishing	1	1	6	3	9		elec.
13 Appleton Screen Plate Co.	Screen Plates	1	1	12	2	14	1	10
14 Appleton Shirt & Pants Co.	Shirts and Pants	1	1	2	9	11		elec.
15 Appleton Steam Laundry	Laundry	1	1	2	4	6		elec.
16 Appleton Toy & Furniture Co.	Toys and Furniture	1	1	40	4	44		35
17 Appleton Water Works	Water for City	1	1	5		5	2	160
18 Appleton Wecker	Printing and Job Work	1	1	5		5		elec.
19 Appleton Wire Works	Brass Wire Cloth	2	2	29	6	35	2	60
20 Appleton Woolen Mills	Wool and Paper Felt	1	1	31	24	55	1	100
21 Atlas Paper Co.	Ground Wood Pulp	1	1	140		140	1	180
22 Boldt, Martin	Bar Fixtures, etc.	1	1	12		12		elec.
23 Eagle Mfg. Co.	Hay Tools and Feed Cutter	1	1	8		8		elec.
24 Fairbanks & Timm	Rollers, etc.	1	1	8		8		wat.
25 Fox River Paper Co.	Box and Writing Paper	1	3	10	125	235	18	400
26 Fox River Screen Plate Co.	Screen Plate	1	1	3		3		wat.
27 Interlake Pulp & Paper Co.	Paper and Pulp	3	1	151	9	160	9	1,200
28 Kimberly & Clark Co.	Paper	1	1	40	40	80	5	700
29 Kimberly & Clark Co.	Paper	1	1	62		62		

FACTORY INSPECTION — APPLETON — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Number.	Total horse power.
301 Kimberly & Clark Co.	Paper	1	1	43	28	71	...	...
31 Kurz & Root	Electrical Goods	1	1	5	...	5	...	wat.
32 Lake Superior Knitting Co.	Knit Goods	1	1	4	34	38	...	elec.
33 Manser & Renner Co.	Planing Mill	1	1	17	...	17	1	100
34 Marsten, J. H.	Hubs and Spokes	1	1	29	...	29	...	wat.
35 Muench Brewing Co.	Brewers	1	1	15	...	15	2	200
36 Patten Paper Co.	Paper	1	1	148	32	180	3	400
37 Riverside Fibre Co.	Sulphite Pulp	1	1	106	...	106	5	1,200
38 Schroeder & Pauls	Marble Works	1	1	5	...	5	...	...
39 Spierling, A.	Woolen Mill	1	1	3	1	4	...	...
40 Tebbel Paper Co., The	Paper	3	1	100	33	133	6	35
41 Valley Iron Works Mfg. Co.	Engine and Mill Repair	3	1	65	...	65	...	wat.
42 Walters, Geo.	Beer and Malt	1	1	15	...	15	2	85
43 Webster, W. M.	Planing Mill	1	1	5	...	5	...	wat.
44 Western Screen Plate Works	Screen Plate	1	1	3	...	3	...	...
45 Willy Company	Flour	1	1	12	...	12	2	280
46 Wisconsin Malt & Grain Co.	Maltsters	1	1	15	...	15	2	300
47 Wisconsin Tissue Paper Co.	Paper	1	1	19	6	24	...	150
48 Wolfraus Lumber Co.	Planing Mill	1	1	6	...	6	1	15
Totals .....	...	44	18	1,452	412	1,864	50	6,080

APPLETON.

Under this head are found the orders affecting the factories in Appleton, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.

Orders Issued.

- 1 Put gong in elevator; swing doors out; guard emery wheels; new rail on runway on third floor and said rail braced; new rail on stairway leading out on south side of building, from first floor to ground; guard circular saws in basement; all set screws on all shafting and counter shaft in whole plant; repair runway on west side from first story; new railing placed where same is off, also new planks put in runway from third floor.
- 2 Guard set screw on shafting; swing doors out.
- 3 Swing doors out.
- 5 Affidavits; guard set screws on shafting; swing doors out.
- 6 Guard set screws and coupling on shafting.
- 7 Swing doors out.
- 8 Guard or remove all set screws on shafting and counter shafts; swing doors out.
- 9 Affidavits; guard set screws on wet machine on first floor, also set screws on "Barker" shafting in wood room; all set screws in the whole plant must be removed or guarded; swing doors out; guard circular saw used for cutting wood; guard main drive belt on both sides in wood room. One-story wood. Guard all screws on all machines and shafting in this plant.
- 10 Swing doors out.
- 12 Guard set screws on all shafting on first floor; swing doors out.
- 13 Lower suction device so it will take up the brass dust better; swing doors out; remove or guard all set screws on all shafting and counter shafts in the whole plant.
- 14 Swing doors out.
- 15 Swing doors out.
- 16 Guard all set screws on all shafting and counter shaft in the whole plant; guard band saw on first floor; swing doors out; rail on gangway between mill and blacksmith shop; rail on stairway leading down to engine room; rail around stairway on second floor. Two-story iron clad. Cover opening in floor on second floor; new rail on gangway on north from blacksmith shop to main factory building.
- 17 Swing doors out.
- 19 Swing doors out.
- 20 Two-story wood. Guard all set screws in building on shaft and countershaft. Guard in running gear on six card machines on second floor; guard or remove all set screws on shafting on second floor; guard in running gear on garnet machine, second floor in picker room; guard belt and pulleys on east side of same machine. Swing doors out. Guard or remove all set screws on first floor.
- Three-story brick. Fire escape.
- 21 Repair wood guard on No. 2 machine; guard all set screws on all shafting; swing doors out.
- 22 Guard all set screws on all machines and shafting; swing doors out.
- 23 Guard band saw on second floor; guard in running gear on planer on second floor; guard all set screws on all shafting in whole plant; suction device on emery wheels; repair elevator top lift cover on third floor; rail around stairway on second floor; swing doors out.
- 24 Swing doors out.
- 25 Guard belt (drive) on second floor between the two super calendars; swing doors out; guard rail around condensing pump in engine room No. 3; guard fly wheel in said room on both west and east side, also floor around condensing pump repaired and floor put in proper shape. Three-story brick. Guard all set screws on first floor on all shafting and counter shafts; all set screws on third floor; all set screws on second floor; guard around bleaca tanks or agitators; fasten guard around head of stairs on first floor; guard water vats; swing doors out; guard all six water filters on first floor; rail around opening in water filtering room; extend walk out three feet on end of water screen for filters; put on bolt tightener; put on main drive belt in engine room.

- Four-story brick. Place fire escape on east side of building or iron bridge built from fourth floor to third floor to building No. 3
- 26 Swing doors out.
- 27 Affidavits; swing doors out.
- One-story wood. Guard emery wheels; fan to carry away stench from digesters; fire escape.
- 28 Guard set screws on all shafting and counter shafts on all floors; swing doors out; guards around holes in floor on second floor on south end of building.
- Four-story brick. Remove or guard all set screws on all shafting and countershaft on first floor; new floor in elevator well; fasten rail on elevator. Repair door on first floor on elevator; replace inside bars on inside of folding doors on elevator should be lift; bars fastened on one end.
- 29 Three-story brick. Guard all set screws on all shafting and counter shaft on first floor; guard all set screws on third floor; set screws on second floor; swing doors out; guard bleach tank on third floor; rail around stairway on second floor, east end.
- 31 Swing doors out.
- 32 Fire escape or outside steps built.
- 33 Guard band saw on first floor; guard all set screws on shafting and counter shafts; guard belts and pulleys on all machines on first floor; guard emery wheels.
- 34 Swing doors out.
- 35 Swing doors out.
- 36 Affidavits; guard belts and pulley on both fan pumps in basement; guard all set screws on all shafting and countershaft in the whole plant; put in fan with suction device; seats in rag room for girls, also fan.
- 37 Swing doors out.
- 38 Swing doors out.
- 39 Guard elevator on second floor; guard or remove all set screws on all shafting on first floor; guard all set screws on second floor on shafting; guard in running gear on picker, second floor; swing doors out.
- 40 Two-story brick. Swing doors out.
- Three-story brick. Remove set screws on all floors on shafting and counter shaft; set screws on shafting on flume room. Fans in cutting room.
- 41 Guard set screws on first floor; guard band saw on second floor; swing doors out; repair runway and stairway on outside.
- One-story brick. Put fan in shape for winter use when casting.
- 42 Guard set screws on shafting in brew house, third and fourth floor; swing doors out.
- 43 Guard set screws on shafting and counter shaft; guard band saw on second floor; swing doors out.
- 44 Swing doors out.
- 45 Guard all set screws on all shafting on first and second floor; all set screws in basement on shafting; swing doors out.
- 47 Guard set screws in basement on shafting on first floor; swing doors out.
- 48 Guard belts and pulleys on second floor; rail at head of stairway on second floor inside of building; rail on stairway on outside of building; guard splitter on crosscut saw; swing doors out.

ASHLAND.

The following table, covering several pages, shows for each of the 24 factories in Ashland, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Powers," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION -- ASHLAND.

NAME OF ESTABLISHMENT.	BUILDINGS.		EMPLOYES.		BOILERS.	
	Under three stories in height.	3 or more stories in height.	Males.	Females.	Number.	Under 16 years.
1 Ashland Box & Planing Co.	Boxes	1	12	1	2	30
2 Ashland Brewing Co.	Brewers and Malsters	3	10	1	1	35
3 Ashland Daily Press, The	Printing	1	15	1	1	elec.
4 Ashland Iron and Steel Co.	Pig Iron	4	85	1	6	650
5 Ashland Light & St. Ry Co.	Power and Light	1	6	1	4	600
6 Ashland Lumber Co.	Lumber	2	68	2	6	500
7 Ashland News	Printing	1	6	2	1	wat.
8 Ashland Screen Mfg. Co.	Stove Boards	1	18	13	1	25
9 Ashland Steam Laundry	Laundry	1	2	10	1	35
10 Ashland Sulphite Fibre Co.	Paper and Pulp	7	55	55	4	400
11 Ashland Water Co. The	Pumping Station	1	4	4	3	300
12 Barker & Stewart Mill	Lumber	1	41	1	5	Idle
13 Bowron, A. W.	Printing	1	2	1	3	gas
14 Bretting, C. G. & Co.	Foundry and Machine Shop	6	47	1	2	80
15 Chequamegon Crib Co.	Printing	1	2	1	3	elec.
16 C. & N. W. R. R. Co.	Machine Shops	3	60	60	1	400
17 Durfee, W. R.	Lumber	1	1	1	6	360
18 East End Mill	Lumber	1	120	120	1	Idle
19 Keystone Lumber Co.	Lumber	1	115	115	10	Idle
20 Kinkel, Julius	Furniture	1	5	5	1	60
21 Mowatt, D. W.	Lumber	1	14	14	6	Idle
22 Pope Lumber Co.	Lumber	2	64	64	4	Idle
23 Scott & Taylor	Interior Wood Work	2	25	25	2	Idle
24 Standard Steam Laundry	Laundry	1	2	4	6	lad.
Totals	41	6	779	20	799	2
						65
						3,310

ASHLAND.

Under this head are found the orders affecting the factories in Ashland, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out.
2	Swing doors out.
3	Swing doors out.
4	Affidavits; swing doors out.
5	Swing doors out.
7	Swing doors out.
8	Swing doors out.
9	Swing doors out.
10	Swing doors out.
11	Swing doors out; stairway from first floor to basement; protect same with railing.
12	Swing doors out.
13	Swing doors out.
15	Swing doors out.
17	Swing doors out.
20	Swing doors out; put hood on belt on saw running through second floor; railing on stairways.
23	Swing doors out.
24	Ventilator; enclose stairways.

BELOIT.

The following table, covering several pages, shows for each of the 35 factories in Beloit, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Powers," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION - BELOIT.

FACTORY INSPECTION.

913

NAME OF ESTABLISHMENT.		LOCATION AND BUSINESS.		BUILDINGS.		EMPLOYEES.		BOILERS.		
				Under three stories in height.	Or more stories in height.	Males.	Females.	Total. Under 16 years.	Number.	Total horse power.
1	Barrett Mfg. Co.	Roofing Paper	6	1	35		3	6	600	
2	Beloit Carriage Works	Wagons and Carriages		1	10		10	1	8	
3	Beloit Daily News	Publishing, etc.		1	10		10			
4	Beloit Electric Light & Power Co.	Light and Power for City		1	10		10	2	200	
5	Beloit Free Press	Publishing, etc.		1	6	9	15		elec.	
6	Beloit Gas Light & Coke Co.	Gas for City		1	130		130	2	130	
7	Beloit Iron Works	Machinery	4	1	3	7	10	1	9	
8	Beloit Steam Laundry	Laundry	1	1	2		2	2	100	
9	Beloit Water Works	Water for City	2	1	300		300	3	240	
10	Berlin Machine Works	Machinery	1	1	30		30	1	30	
11	Besly, C. H., & Co.	Flour and Feed	1	1	8	30	38		gas	
12	City Mill	Handling Tobacco	1	1	4		4			
13	Crahen, P. H.	Contractors and Builders	1	1	20		20	1	23	
14	Cunningham Bros.	Machine Knives	1	1	4	8	12	1	13	
15	Doud, R. J., Knife Works	Laundry	1	1	4	3	7	1	10	
16	Eureka Steam Laundry	Laundry	1	1	800		800	5	500	
17	Excelsior Steam Laundry	Machinery, etc.	1	1	7		7			
18	Fairbanks, Morse & Co.	Carriages, etc.		1	4	4	8			
19	Ferguson Bros.	Paper Boxes	2	1	120	80	200	2	30	
20	Foster, John A.	Ladies' Shoes	1	1	15		15			
21	Foster, John, Shoe Co.	Sheet Metal Work	1	1	8		8	1	20	
22	Franz & Newton	Machinery	1	1	45		45		water	
23	Frazier, H., Mfg. Co.	Scales	1	1	5		5	1	15	
24	Gaston Scale Co.	Repair Implements	1	1	10		10		gas	
25	Gesley Mfg. Co.	Bicycles, etc.	1	1	5		5		elec.	
26	Goddard & Allen Co.	Wagons, etc.	1	1	8		8			
27	Johnson, O. J.	Jobbers in Gloves, etc.	1	1	4		4	4	elec.	
28	Leonard, H. J.	Machinery	1	1	5		5		elec.	
29	McElroy, J. C., & Co.	Machinery	1	1						
30	Mattison, C.		1	1						

FACTORY INSPECTION—BELOIT—Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYEES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.
31 Rosenblatt, H., & Sons	Overalls, Shirts, etc.	1	1	25	175	200	.....	2
32 Schlenk, F.	Beer	1	1	3	.....	3	.....	1
33 Star Mills	Flour and Feed	1	1	1	.....	1	.....	10
34 Thompson, J., & Sons Mfg. Co.	Agricultural Implements	3	3	200	.....	200	.....	3
35 Warner, C. O.	Planing Mill	1	1	2	.....	2	.....	190
Totals .....	.....	52	10	1,892	316	2,208	15	37
								2,417

Total horse
& power.

BELOIT.

Under this head are found the orders affecting the factories in Beloit, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Guard all machinery where possible; swing doors out. Two-story frame. Guard shafting where exposed. Two-story brick and frame. Guard elevator shaft on second floor.
2	Swing doors out.
3	Swing doors out.
4	Swing doors out.
5	Swing doors out.
6	Swing doors out.
7	Swing doors out.
8	Swing doors out.
9	Swing doors out.
10	Guard fly wheel and connecting shaft on engine in engine room annex; swing doors out.
11	Swing doors out.
13	Swing doors out.
14	Swing doors out.
15	Swing doors out.
16	Swing doors out.
17	Swing doors out.
18	Guard elevator shafts on first floor; swing doors out; cut off end of shaft and guard fly wheels in heating and power room on west side of gas engine shop; guard fly wheels on both sides of large gas engines in west side engine room; guard and provide suction device for emery wheels in polishing room. One-story brick. Guard drive belts to dynamo in power room, also fly wheels to gas engines in power house and to gas engines in blower room; guard and provide suction device for emery wheels. One-story brick (Wind mill machine shop). Guard fly wheels to main en- gine outside power room. Two-story stone. Guard elevator shaft on second floor. One-story brick (galvanizing department). Guard water or acid tanks or cover them. One-story brick (wood working pattern shop). Guard fly wheels to gas engine. One-story frame. Guard all exposed keys, set screws, shafting, belting, fly wheels and all tanks containing molten metals or liquids.
19	Swing doors out.
20	Swing doors out.
22	Swing doors out.
24	Swing doors out.
25	Swing doors out.
26	Swing doors out; guard fly wheels to gasoline engine.
28	Swing doors out.
29	Swing doors out.
30	Swing doors out.
31	Swing doors out.
32	Swing doors out; guard elevator shaft on first and second floors.
33	Swing doors out.
34	Guard emery wheels; swing doors out.
26	Swing doors out.

CHIPPEWA FALLS.

The following table, covering several pages, shows for each of the 14 factories in Chippewa Falls, which have been inspected from time to time during the years 1899 and 1900, the name, address kinds of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Powers," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION — CHIPPEWA FALLS.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.										BOILERS.	
	BUILDINGS.		EMPLOYES.				BOILERS.					
	Under three stories in height.	3 or more stories in height.	Males.	Remains.	Total.	Under 16 years.	Number.	Total horse power.				
1 Bresina, John	1	3	4	4	4							
2 Chippewa Falls Electric Light Co.	3	3	10	10	10		2	300				
3 Chippewa Lumber & Boom Co.	3	3	406	406	406		4	400				
4 Chippewa Woolen & Linen Co.	1	1	6	7	13		1	35				
5 Chippewa Valley Pub. Co.	1	1	10	4	14		2	175				
6 Consolidated Milling Co.	1	3	10	5	15		2	175				
7 Herald Printing Co., The	1	3	6	5	11			elec.				
8 Lemkuhl, J., Brew. Co.	11	3	21	21	21		2	80				
9 Linse Bros.	2	4	13	13	17		1	15				
10 Linnets, E. G.	2	4	8	1	9							
11 South Side Mfg. Co.	4	1	20	1	20	2	1	45				
12 Sash, Doors and Blinds	5	5	39	1	40		2	50				
13 Stanley, F. G., & C. A.	1	1	5	5	6			wat.				
14 Tilden Milling Co.	3	3	80	20	100	6		wat.				
15 Wegenberg Bros.												
Totals	37	8	623	51	680	8	13	1,100				

CHIPPEWA FALLS.

Under this head are found the orders affecting the factories in Chippewa Falls, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out.
2	Swing doors out.
3	Swing doors out.
4	Guard pulleys on first floor on two machines used in coloring process.
5	Swing doors out; place hood or protection over belt from motor engine on first floor to press in basement.
6	Swing doors out.
7	Swing doors out.
8	Swing doors out.
9	Swing doors out.
10	Swing doors out.
11	Affidavits; guard pulleys on two matching machines. Railing on stairs; repair bars on elevator; comply with law as to two minors under 16 years; swing doors out.
12	Guard small band on scroll saw.
13	Swing doors out.
14	Affidavits; swing doors out; discharge one child under 14.

EAU CLAIRE.

The following table, covering several pages, shows for each of the 42 factories in Eau Claire, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Powers," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION.—EAU CLAIRE.

NAME OF ESTABLISHMENT.		LOCATION AND BUSINESS.		BUILDINGS.		EMPLOYEES.			BOILERS.		
				Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	N number.	Total horse power.
1	Acme Feed Mill	Flour and Feed	1	1	3		3	3		1	80
2	Bonell, Wm., & Son	Carriages and Sleighs	1	1	16		16	15			
3	Brien, B. J.	Shirts, Pants, etc.	1	1	1	3	4	4			
4	Chippewa Valley Electric R'y Co.	Street Railway	1	1	35		35	36			
5	City Steam Laundry	Laundry	1	1	12	48	60	60		1	56
6	Cuttler, A. A.	Lumbermen's Shoes	1	1	60	10	70	60			elec.
7	Dells Lumber Co.	Dressing Lumber	2	2	188		188	188		8	400
8	Dells Paper & Pulp Co.	Wrapping Paper	1	1	50	65	115	115	3	3	450
9	Der Herald	Publishing and Printing	1	1	2	1	3	3			
10	Drummond Bros.	Meat Packers	1	1	45		45	46		1	50
11	Eau Claire Bedding Co.	Mattresses and Pillows	1	1	3		3	3			gas
12	Eau Claire Roller Works	Boilers	1	1	15		15	15			elec.
13	Eau Claire Book Co.	Printing and Binding	1	1	14	6	20	20	1		
14	Eau Claire Box Co.	Boxes	1	1	17		17	17	4	2	100
15	Eau Claire Water Works Co.	City Supply	1	1	2		2	2		2	200
16	Eau Claire Electric Light & Power Co.	Electric Light and Power	1	1	2		2	2		2	200
17	Eau Claire Gas Co.	Mfg. Gas	1	1	3		3	3		1	40
18	Eau Claire Linen Co.	Linen and Crash	1	1	10	40	50	50	1	1	35
19	Fish, E. M., & Co.	Sash and Doors	1	1	25		25	25		1	50
20	Free Press	Publishing and Printing	1	1	3	4	7	7			elec.
21	Half Moon Lake Shingle Mill	Shingles	1	1	40		40	40	2	6	300
22	Kurven Dress Stays Co.	Dress Stays	1	1	2	18	20	20			elec.
23	Lakeside Elevator Co.	Handle Grain	1	1	3		3	3		1	60
24	Leader, The	Publishers and Printers	1	1	14	8	22	22			elec.
25	Lindemann Box & Veneer Co.	Box Shooks	1	1	95		95	95	31	2	150
26	Madison St. Mfg. Co.	Sash, Doors, etc.	1	1	25		25	25		1	40
27	McDonough Mfg. Co.	Machinery	1	1	60		60	60			wat.
28	McDonough St. Milling Co.	Flour and Feed	1	1	2		2	2		1	40
29	Michels, Henry	Lager Beer	1	1	3		3	3		1	20
30	Neckerman, John	Brooms	1	1	4		4	4			

FACTORY INSPECTION — EAU CLAIRE — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.										BUILDINGS.			EMPLOYES.			BOILERS.									
											Under three stories in height.		3 or more stories in height.		Males.		Females.		Total.		Under 16 years.		Number.		Total horse power.	
31 Northwestern Lumber Co.	Lumber and Shingles										3	1	108	1	108	1	108	6	600							
32 Putty Bros.	Job Printing										1	1	67	3	70	4	74	1	wat.							
33 Phoenix Furniture Co.	Office Fixtures										1	2	185	15	200	185	15	2	80							
34 Pioneer Furniture Co.	Furniture										1	2	65	63	128	65	63	2	400							
35 Phoenix Mfg. Co.	Saw Mill Machinery										3	3	276	276	550	276	276	2	100							
36 Shaw, Daniel, Lumber Co.	Lbr. and Mouldings																	2	200							
37 Telegram Publishing Co.	Publishing and Printing											1	5	5	10	5	10		elec.							
38 Union Overlaid Co.	Overalls											1	4	36	40	40				300						
39 Valley Lumber Co.	Lbr., Lath and Shingles										1	1	185	185	3	185	3	2	30							
40 Wabash Elevator Co.	Sell Grain and Feed										1	1	2	2	4	2	4	1	100							
41 Walter & Co., John	Lager Beer										1	1	8	8	16	8	8	2	120							
42 Wisconsin Refrigerator Co.	Refrigerators										1	1	70	70	140	70	70	2	120							
Totals											41	9	1,720	247	1,967	65	53		4,195							

EAU CLAIRE.

Under this head are found the orders affecting the factories in Eau Claire, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out.
2	Swing doors out.
3	Swing door out: guard set screws of shaft under machine table.
5	Box belt to finisher; railing around boiler pit; fix door to elevator on second floor and keep closed; swing doors out.
6	Swing doors out.
7	Guard belts and pulleys to planer.
8	Swing doors out: guard belts and pulleys on paper cutters; large pulley and belt on calendar shaft; couplings on main line shaft; water wheel gears in basement and set screws on all shafting.
9	Swing doors out.
10	Guard fly wheel to engine; swing doors out; guard elevators.
11	Swing doors out.
14	Affidavits; swing doors out.
15	Swing doors out: new floor throughout building.
16	Swing doors out: box and guard all drive belts.
17	Swing doors out.
18	Affidavits; guard set screws and gears on looms.
19	Swing doors out.
20	Swing doors out.
21	Guard set screws on shafting and belts and pulleys where exposed.
22	Guard set screws on shaft under machine table.
24	Swing doors out.
25	Guard balance wheel to hooper press. New treads on outside stairs.
26	Swing doors out.
27	Swing doors out: guard emery wheels; provide suction device.
28	Guard bolts and pulleys on rollers; guard large drive wheels in basement; railing on stairs; swing doors out.
29	Swing doors out.
30	Swing doors out.
31	Affidavits. Two-story wood. Guard large fly wheels to engines; guard bolt and pulley to rip saw machine.
32	Swing doors out.
33	Guard belt to small band saw; guard set screws on all shafting; guard belt on tenant machine and provide railing for stairs.
34	Affidavit for one child under 16: guard set screws; unlock door at foot of stairs; guard stairs in store room.
35	Swing doors out: guard emery wheels and provide suction device.
36	Guard coupling on large shaft outside, in front of mill.
37	Swing doors out: new closet for girls.
38	Swing doors out.
41	Swing doors out.

FOND DU LAC.

The following table, covering several pages, shows for each of the 40 factories in Fond du Lac, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Powers," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION—FOND DU LAC.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.		BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.
1 Able Bros.	General Repairing	1	1	2	2	2	2
2 Able, T. W.	Machine Shop	1	1	7	113	20	3
3 Badger Sewing Co.	Overalls	1	1	10	10	10	3
4 Berchard Brewing Co.	Lager Beer	2	1	3	3	3	3
5 Boucher, Frank	Carrriages and Sleighs	1	1	100	100	100	12
6 Bowen Mfg. Co.	Refrigerators, etc.	2	1	10	3	13	13
7 Burrows, Geo. S.	Carriage Tops	2	1	7	1	8	8
8 Clark Mfg. Co.	Gasoline Engines	1	1	4	7	10	4
9 Essie, A., Bottling Works	Soft Drinks	1	1	3	7	10	1
10 Eureka Steam Laundry	Laundry	1	1	5	10	15	1
11 Fond du Lac Awning & Tent Co.	Awnings and Tents	1	1	6	1	6	1
12 Fond du Lac Boiler Works	Smoke Stacks and Boilers	1	1	8	1	9	1
13 Fond du Lac Broom Works	Brooms	1	1	25	65	100	3
14 Fond du Lac Canning Co.	Canned Vegetables	1	1	4	4	4	4
15 Fond du Lac File Works	Files	1	1	20	20	20	1
16 Fond du Lac Implement Co.	Farm Implements	1	1	6	6	6	1
17 Fond du Lac Roller Mill	Flour	1	1	10	90	100	2
18 Fond du Lac Shirt & Overall Co.	Shirts and Overalls	1	1	3	9	12	24
19 Fond du Lac Steam Laundry	Laundry	2	2	69	1	60	7
20 Fond du Lac Table Mfg. Co.	Tables	1	1	4	1	4	1
21 Fountain City Bottling Works	Root Beer	1	1	60	3	60	1
22 Fountain City Plow Works	Plows	3	3	172	2	178	18
23 Giddings & Lewis	Machinery	2	2	3	3	3	3
24 Gurney Refrigerator Co.	Refrigerators	2	2	16	4	20	1
25 Haas, L. F., Carriage Co.	Carriages	1	1	8	1	9	1
26 Harrison Postal Bag Co.	Postal Bags	2	2	16	4	20	1
27 Huber & Fuhrman	Drugs	3	3	160	8	168	3
28 Moore & Galloway Lumber Co.	Sash, Doors, etc.	1	1	8	4	12	12
29 Lake View Bedding Co.	Mattresses	1	1	9	9	9	9
30 Molitor, M. & M.	Carriages, etc.	1	1	1	1	1	1

FACTORY INSPECTION -- FOND DU LAC -- Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.		
		Under three height.	3 or more height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
N. W. Food Product Co.	Flake Chips	1	1	4	2	6			gas
Purstnow, A. H., & Co.	Jewelry	1	1	10	4	14		3	309
Reuping, Fred, Leather Co.	Leather	1	2	295		295	12	1	120
Steenberg, O. C., & Co.	Sash, Doors, etc.	3	1	35		35		1	60
Sweet, E. P. and H. L., Co.	Wagons, etc.	3	3	31	1	32			gas
U. S. Manufacturing Co.	Bicycles	1	1	15	55	70		1	25
Variety Wood Working Co.	Boxes, Bee Hives, etc.	1	1	7		7	1	1	30
Wafer Yeast Co.	Yeast Wafers		1	12	10	22		1	50
Wild, B., Factory	Confectionery		2	40	20	60		1	160
Winnebago Mfg. Co.	Furniture	2	2	250		250	27	4	
Totals		49	16	1,344	403	1,747	85	35	2,147

FOND DU LAC.

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Index No.	Orders Issued.
1	Swing doors out.
3	Swing doors out.
5	Swing doors out.
6	Swing doors out; two boys under age discharged; file affidavits.
7	Swing doors out.
8	Swing doors out.
9	Swing doors out.
10	Swing doors out.
11	Swing doors out; erect fire escape.
12	Swing doors out.
13	Swing doors out.
14	Swing doors out.
15	Swing doors out.
16	Swing doors out.
18	Swing doors out.
19	Swing doors out.
20	Swing doors out.
21	Swing doors out.
23	Swing doors out.
24	Swing doors out; file affidavits.
25	Properly guard hoist, east side. first and second floors.
26	Swing doors out.
27	Swing doors out.
28	Swing doors out.
29	Swing doors out.
30	Swing doors out.
31	Guard elevator on two floors.
32	Swing doors out.
33	Swing doors out; guard elevator on second floor; communication from work room to engineer.
34	Swing doors out.
35	Swing doors out.
36	Swing doors out.
37	Swing doors out.
38	Swing doors out.
39	Swing doors out.
40	Belt on moulding stickler, first floor, west side guard; guard belt on sanding machine, second floor, east side; guard belt to double-headed tenon stickler (counter shaft), east side, second floor; swing doors out.

GREEN BAY.

The following table, covering several pages, shows for each of the 40 factories in Green Bay, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Powers," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION — GREEN BAY.

FACTORY INSPECTION.

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NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYEES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Number.	Total horse power.
1 Alart & McGuire	Pickles	1	1	28	15	41	1	40
2 Alouza Spring Co.	Mineral Water	1	1	10	10	20	3	15
3 American Laundry	Laundry	1	1	4	2	7	1	150
4 Batten Biscuit Co., The ..	Confectionery	1	1	49	76	124	23	150
5 Burton, D. W., Roller Co. .	Confectionery	1	1	87	37	124	2	20
6 Burton, D. W., Roller Co. .	Boilers	1	1	15	15	30	1	50
7 Dickmann & Shober Co. .	Sash, Doors, etc.	1	1	27	27	54	1	50
8 Diamond Match Co.	Lumber	1	1	175	175	350	9	560
9 Ebeling, John H.	Flour	1	1	29	1	30	2	160
10 Enoch, Chas.	Brooms	1	1	4	4	8	1	10
11 Green Bay Bakery	Candles	1	1	20	10	30	1	10
12 Green Bay Carriage Co. .	Carriages and Wagons ..	1	1	15	15	30	1	90
13 Green Bay Planing Mill .	Sash, Doors, etc.	1	1	34	34	68	1	100
14 Handler, J. J.	Mineral Water	1	1	4	4	8	1	10
15 Helgemester Brewing Co. .	Wagons and Repair	1	1	7	7	14	1	10
16 Hess, Geo. B., Co., The ..	Beer and Malt	1	1	29	1	30	2	150
17 Hoberg, John, Co., The ..	Flour	1	1	12	12	24	1	100
18 Howard Foundry & Machine Shop	Paper	1	1	28	7	35	2	205
19 Hudson & Sharp	General Repairing	1	1	10	10	20	1	12
20 Industrial Iron Works	Machinery	1	1	7	7	14	1	10
21 Kennitz Furniture Co.	Gasoline Engines	1	1	4	4	8	1	75
22 Kepper, Paul C.	Spice Mill	1	1	4	4	8	1	75
23 Larson, Wm., Canning Co. .	Furniture	1	1	139	1	140	2	300
24 McDonald, H., Planing Mill	Jewelry	1	1	5	1	6	1	100
25 Milwaukee Sanding Machine Co.	Canning Vegetables	1	1	145	76	221	2	150
26 Mueller Bros. & Co.	Planing Mill	1	1	74	1	75	1	80
27 Murphy Box Co.	Machinery	1	1	65	65	130	1	75
28 Murphy Lumber Co.	Sash, Doors, etc.	1	1	25	25	50	1	100
29 Murphy Lumber Co.	Packing Boxes	1	1	60	60	120	13	300
30 Murphy Lumber Co.	Lumber	1	1	125	125	250	6	300

FACTORY INSPECTION — GREEN BAY — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Number.	Total horse power.
21 O'Leary Bros.	Boilers	1	1	12	...	12	1	10
22 Rahr, Henry, Sons	Beer and Malt	1	1	24	...	24	1	40
23 Rice, G. H.	Wages	1	1	34	1	35	2	200
24 Rahr, J. S.	Laundry	1	1	6	...	6	...	elec.
25 Rouse, George	Soap	1	1	6	...	6	1	30
26 Schebeck, Frank	Brooms	1	1	2	...	2	...	...
27 Smith, Herman	Laundry	1	1	4	...	4	...	...
28 Union Laundry	Wagons, etc.	1	1	3	4	7	1	20
29 Vandyke, O., Brewing Co.	Beer	1	1	13	...	13	1	25
30 Wing, Sam	Laundry	1	1	8	...	8	1	15
Totals .....	.....	53	10	1,353	196	1,559	45	3,027

GREEN BAY.

Under this head are found the orders affecting the factories in Green Bay, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
2	Swing doors out.
3	Swing doors out.
4	Swing doors out; file affidavits; fire escape.
7	Swing doors out.
8	Boys under age discharged; file affidavits.
9	Swing doors out.
10	Swing doors out.
12	Swing doors out.
14	Swing doors out.
15	Swing doors out.
16	Swing doors out.
20	Guard and place hoods on emery wheels; swing doors out.
22	Swing doors out.
23	Swing doors out; two fire escapes.
25	Discharged three boys under age; file affidavits.
26	Swing doors out.
27	Guard and place suction device on emery wheels.
29	Discharge three employees under 16 years, and hereafter keep on file affidavits.
32	Swing doors out.
34	Swing doors out.
35	Swing doors out.
37	Swing doors out.
38	Swing doors out.
39	Swing doors out.

JANESVILLE.

The following table, covering several pages, shows for each of the 41 factories in Janesville, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Powers," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION — JANESVILLE.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Number.	Total horse power.
1 Blodgett Milling Co.	Flour and Feed	1	1	25		25	2	160
2 C. & N. W. Ry. Shop	Repair Shop	1	1	60		60	1	125
3 Choate Hollister Co.	Furniture	1	1	60		60	2	240
4 Clinton, W. E.	Book Binder	1	1	6		6		
5 Ford Milling Co.	Rye Flour	1	1	6		6		water
6 Gazette Printing Co., The	Publishing, etc.	1	1	14	4	18	1	elec.
7 Globe Works Co.	Machinery	1	1	6		6		water
8 Hanson Furniture Co.	Tables	1	1	48		48	1	90
9 Hemming, Wm., & Son	Alc. and Porter	1	1	2		2		8
10 Isabel Mfg. Co.	Ladies' Skirts and Waists	1	1	3	23	26	1	elec.
11 Janesville Barb Wire Co.	Barb Wire	1	1	65		65		gas
12 Janesville Carriage Co.	Carriages	1	1	25		25		elec.
13 Janesville Clothing Co.	Shirts, Overalls, etc.	1	1	16	43	60		elec.
14 Janesville Cotton Mill	Cotton Sheeting	2	1	115	106	220	3	240
15 Janesville Daily Record	Publishing, etc.	1	1	8		8		elec.
16 Janesville Electric Co.	Light for City	1	1	17		17	2	160
17 Janesville Ice Tool Co.	Playing Tools	1	1	6		6		elec.
18 Janesville Journal	Publishing, etc.	1	1	3		3		elec.
19 Janesville Machine Co.	Agricultural Implements	4	1	200		200	4	280
20 Janesville Steam Laundry	Laundry	1	1	4	8	12	1	30
21 Janesville Street Railway Co.	Street Railway	1	1	12		12	2	180
22 Janesville Pearl Button Co.	Pearl Buttons	1	1	20	20	40	1	lad
23 J. Fries Co., The	Sash, Doors, etc.	1	1	64		64	1	125
24 Krupp Canada F. Co.	Refrigerator	1	1	6		6	2	60
25 Marshall Knitting Co.	Underwear	1	1	10	100	110	1	40
26 Marshall F. M. & Co.	Ladies' Fine Shoes	1	1	53	47	100		water
27 New Doty Mfg. Co.	Machinery	1	1	16		16		water
28 New Gas Light Co.	Gas for City	1	1	10		10	2	water
29 Norcross & Doty	Flour and Feed	1	1	4		4		
30 Northwestern Novelty Co.	Advertising Rulers	1	1	3		3	1	40

31	Parker Pen Co.
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JANESVILLE.

Under this head are found the orders affecting the factories in Janesville, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Guard belts and pulleys on rollers and remove exposed keys from same; guard water wheel gears; swing doors out.
3	Swing doors out.
4	Swing doors out.
5	Swing doors out.
6	Affidavits; swing doors out.
7	Swing doors out.
8	Swing doors out.
9	Swing doors out.
10	Swing doors out.
11	Guard fly wheel to Fairbanks engine and set screws on wire spooler and on shafting in main room and pulley shaft to wire twister, also gears on same; swing doors out.
12	Swing doors out.
13	Affidavits; swing doors out.
14	Swing doors out; eight children under 14 discharged; affidavits.
15	Swing doors out.
16	Swing doors out.
17	Swing doors out.
18	Swing doors out.
19	Swing doors out; guard emery wheels and provide suction device for same.
20	Swing doors out.
21	Swing doors out.
22	Guard belts and pulleys to button saws, also belt and pulley separator and shaker and set screws on all shafting; swing doors out.
23	Guard belts and pulleys both sides of large planer on first floor; swing doors out; provide suction device for emery wheels; guard belts and pulleys on second floor.
24	Swing doors out.
25	Swing doors out.
26	Affidavits; suction device for all dust producing machines; swing doors out.
27	Guard set screws on end of shaft to drill press; swing doors out.
28	Swing doors out.
30	Affidavits; swing doors out; guard belts and pulleys both sides of planer, also belt and pulley to small gang saws
31	Orders fire escape.
32	Swing doors out.
33	Swing doors out.
34	Affidavits; guard belt and pulley, also fly wheel to Westinghouse engine; swing doors out.
35	Swing doors out.
36	Swing doors out.
37	Guard key to small pulley to rip saw and belt and pulley to same; guard belt and pulley and set screws on band saw; swing doors out.
38	Swing doors out.
39	Swing doors out.
40	Swing doors out.
41	Guard buffing wheels and provide suction device; repair guard on fly wheel to engine.

KAUKAUNA.

The following table, covering several pages, shows for each of the 17 factories in Kaukauna, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION — KAUKAUNA.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.
1 Hand Laundry	Laundry	1	1	1	8	5	5	hand
2 Horne, Fred	Repairing	1	1	1	5	5	5	gas
3 Kaukauna City Water Co.	Supply Water	1	1	1	1	1	1	180
4 Kaukauna Electric Light Co.	Electric Light	1	1	1	1	1	1	200
5 Kaukauna Fibre Co.	Sulphite Pulp	1	1	60	60	60	2	500
6 Kaukauna Lumber Mfg. Co.	Planing Mill	1	1	7	7	7	4	35
7 Kaukauna Machine Works	Machinery	1	1	20	20	20	4	10
8 Kaukauna Steam Laundry	Laundry	1	1	1	3	4	1	10
9 Kaukauna Sun, The	Printing	1	1	2	2	4	4	1
10 Kaukauna Times	Printing	1	1	5	5	6	6	8
11 Lindauer Pulp Co.	Wood Pulp	1	1	22	22	22	22	water
12 Outagamie Paper Co.	Paper and Pulp	1	1	70	30	100	100	water
13 Russell Bros.	Flour and Feed	1	1	5	5	5	5	water
14 Tullmany Pulp & Paper Mill	Paper and Pulp	1	1	89	11	100	100	4
15 Tullmany Pulp Mill	Wood Pulp	1	1	14	14	14	14	water
16 Union Bag & Paper Co., The	Paper and Pulp	1	1	50	50	50	50	3
17 Union Bag & Paper Co., The	Bags	1	3	37	52	89	2	350
Totals		12	7	385	101	496	8	21 1,929

KAUKAUNA.

Under this head are found the orders affecting the factories in Kaukauna, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out.
2	Swing doors out; guard set screws on shafting.
4	Swing doors out.
5	Swing doors out; guard emery wheels; two fans for suction device on third floor.
6	Affidavits for three boys under 14 years; guard set screws on shafting, also band saw on bottom; put splitter on circular saw; guard set screw on main shaft on second floor.
7	Guard emery wheels.
8	Swing doors out.
9	Affidavits; swing doors out.
10	Swing doors out.
11	Guard emery wheels.
12	Fire escape on west side of building; guard cog wheel on agitator; guard cone pulleys and speed wheels on east and west sides of building, second floor; guard emery wheels; put in suction device, rotary room.
13	Swing doors out.
14	Guard emery wheels; swing doors out.
15	Affidavits; swing doors out.
16	Swing doors out; fire escape on ironclad building, also on main building.
17	Guard set screws on hand wheels in bag machines on second floor; guard in running gear on automatic suction machines, also all loose keys on same; guard all emery wheels.

KENOSHA.

The following table, covering several pages, shows for each of the 24 factories in Kenosha, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firm as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION — KENOSHA.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.		BOILERS.			
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
1 Allen's, N. R. Sons	Leather	5	4	575	3	578	6	7	900
2 American Steam Laundry	Laundry	1	1	3	3	6	12	1	20
3 Badger Brass Mfg. Co.	Acetylene Lamps	1	1	150	50	200	11	1	75
4 Bain Wagon Co.	Wagons	3	4	390	13	403	160	3	330
5 Chicago Brass Works	Rolling Brass	1	1	177	400	577	12	6	480
6 Chicago-Rockford Hosiery Co.	Hosiery	4	4	290	12	302	14	5	420
7 Davy Burnt Clay Ballast Co.	Machinery	1	1	14	1	15	1	1	35
8 Grant, Mrs. C.	Sash, Doors, etc.	1	1	14	1	15	1	1	75
9 Head & Hewitt	Printing	1	1	7	2	9	1	1	water
10 Johnson, Peter H.	Laundry	1	1	6	2	8	8	1	20
11 Kenosha Orb Co.	Furniture	1	1	50	1	51	10	1	100
12 Kenosha Daily Gazette	Printing	1	1	6	3	9	6	1	gas
13 Kenosha Laundry Co.	Laundry	1	1	3	8	11	1	1	20
14 Kenosha Light & Power Co.	Electric Light	1	1	6	1	7	1	3	400
15 Kenosha Tool & Novelty Co.	Novelties	1	1	11	1	12	1	1	50
16 Kenosha Union	Printing	1	1	1	1	2	1	1	gas
17 Lippert Iron Works	Machine Shop	3	2	50	38	88	15	1	75
18 Northwestern Wire Mattress Co.	Furniture	1	1	662	15	677	700	8	1,040
19 Pettit Maltng Co.	Mal't	1	1	15	1	16	10	2	150
20 Pelsch, Nicholas	Wagons and Carriages	1	1	10	1	11	10	1	gas
21 Sieg, Charles H.	Bicycles	1	1	260	287	547	12	4	400
22 Sterling Cycle Co.	Bicycles	1	1	235	235	470	12	4	350
23 Wells & Messier	Machine Shop	1	1	12	12	24	6	1	180
24 Windsor Spring Bed Co.	Spring Beds	1	1	23	12	35	35	6	gas
Totals .....	.....	33	11	2,788	530	3,318	227	51	4,940

KENOSHA.

Under this head are found the orders affected the factories in Kenosha, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out. One story wood. Guard chains to bark grinder on both sides of machine in bark mill; Shop C. Second floor, guard all set screws on shafting. Shop E. Guard all set screws; all set screws on shafting, third floor; fly wheel pulley, main belt to engine on first floor Shop A. Set screws on jack and fan above, second floor. Shop B. Three wheels which guard the arms of leather jack, second floor; set screws on shafting to brush machine, first floor; Shop A. All set screws on shafting and collars in basement. Shop C. All set screws on shafting.
2	Swing doors out; belt and pulley on neckle machine guarded and boxed.
3	Affidavits: swing doors out; guard all set screws in plating room; key, balance wheel and belt to drawing press No. 3; all set screws on shafting in press room; all set screws on counter shaft in tool room; set screws on shafting on second floor; set screws on shafting and belt boxed in buffing room.
4	Swing doors out.
5	Affidavits: fly wheel and governor wheel on electric engine; pulley and belt on bottom press; set screws on all shafting and collars; pulley on large trimmer in rolling mill; piston on large engine in rolling mill; large shears in casting shop; guard belt to shaper and planer, in board room; set screws on collars and shaftings in reed room; belt to emery grinder, also set screws on grindstone; shaft in wood working department; set screws on shafting in copper mill.
6	Swing doors out.
7	Swing doors out; guard set screws on shafting in wood working and machine departments; also in blacksmith shop.
8	Swing doors out; guard all set screws on shafting and collars; also belts and pulleys to moulding machine and matcher on second floor, and belts and pulleys to matcher on first floor.
9	Swing doors out.
10	Affidavits: swing doors out; put in exhaust fan.
11	Set screws on all shafting on first floor; set screws on main and counter shafting on second floor guarded.
12	Swing doors out.
13	Swing doors out.
14	Swing doors out; guard fly wheel and belts on inside and outside of Ideal Electric engine in center of room; also guard fly wheel and belt to engine on west side; guard fly wheel and belt on west side of Westinghouse engine and fasten guards on floor in electric room.
16	Swing doors out; guard set screws on all shafting, also in buffing room; suction device and guard on four polishing wheels and one emery wheel.
16	Swing doors out.
17	Swing doors out.
18	Guard belt and pulleys to 1-10 sticker, also 3-9 sticker, first floor; belt and pulley to matcher; belt and pulley to automatic jointer; pulley and belt on planer, No. 3; all set screws on shafting and collars; guard all set screws and shafting in machine shop and tool room.
19	Swing doors out; guard all set screws on shafting on first floor.
20	Swing doors out.
21	Guard all set screws in wheel room, also in tool room; set screws on air pump, gear on top of two drill presses; set screws on main shaft in buffing room; gear to rear fork press on top in receiving room; guards and suction device for wheels in buffing room and polishing room.
22	Swing doors out.
24	Affidavits; swing doors out.

LA CROSSE.

The following table, covering several pages, shows for each of the 73 factories in La Crosse, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firm as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION—LA CROSSE.

NAME OF ESTABLISHMENT.		LOCATION AND BUSINESS.		BUILDINGS.		EMPLOYEES.			BOILERS.		
				Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
1	Askew & Gleason	Cameras		1		50	10	60	3	1	25
2	Anderson, Mons	Clothing			1	20	120	140	4	1	30
3	Benton, Thos. P.	Machinery		1		23		23		1	20
4	Boycott, W. J.	Blinding		1		24	2	26	4		elec.
5	Brush Electric Light & Power Co.	Electric Light and Power				12		12		3	280
6	Cargill, W. W., Co.	Ship Grain		1		12		12		1	100
7	Chicago, Burlington & Quincy Ry. Co.	Round House		3		184		184		3	120
8	C. & M. & St. P. Ry. Co.	Round House		3		72		72		3	100
9	Coleman, C. L., Lumber Co.	Lumber, Lath and Shingles		2		130	20	150		5	500
10	Davis, Medary & Patz	Tannery		4		75		75		5	75
11	Davis, Sorenson & Co.	Contractors		1		30		30		1	60
12	Doud Sons & Co.	Barrels		1		8		8		1	40
13	Eagle Brewery	Beer			1	10		10		1	60
14	Edison Light & Power Co.	Electric Light				9		9		4	400
15	Fountain City Drill Co.	Agricultural Implements		3		90		90		1	100
16	Franklin Iron Works	Machinery		2		18		18		1	12
17	Funk, Jos. B., Co.	Confectionery			1	28	112	140	40	1	75
18	Funk, M., Boiler Works Co.	Boilers, Tanks, etc.				15		15			elec.
19	Gatway City Lumber Co.	Lumber, Lath and Shingles		1		45	15	60		6	600
20	Gatway City Laundry	Laundry				7	13	20		1	30
21	Gund, Ino., Brewing Co.	Beer		1	1	62	16	78	4	3	275
22	Hackner, E.	Church Furniture		1		40		40	2		elec.
23	Haerter, N.	Blank Books		1		3	2	5			
24	Holway, M. B., Estate	Lumber, Lath and Shingles		2		85		85		7	500
25	Hollman Brewing Co.	Beer		1	1	35	6	40		3	225
26	Hyde S. Y. Elevator Co.	Handle Grain		1		10		10		1	80
27	James John	Machinery		1		35		35		1	35
28	Jeller, G. A.	Job Printing		1		3		3		3	elec.
29	Krachwill, M.	Confectionery			1	11	25	36		2	150
30	Kuhn, R. C., Sash & Door Co.	Sash, Doors, etc.		1	1	53		53	2		elec.

FACTORY INSPECTION — LA CROSSE — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.
31 La Crosse Root & Shoe Co.	Boots and Shoes	1	1	34	6	40		elec.
32 La Crosse Broom Co.	Brooms	1	1	16		16	1	elec.
33 La Crosse Box Co.	Boxes and Crates	1	1	14		14	2	1
34 La Crosse City R'y Co.	Power for St. R'y Co.	1	1	53	2	55		200
35 La Crosse Cracker and Candy Co.	Confectionery	1	1	26	40	66	15	1
36 La Crosse Chronicle	Publisher	1	1	15	1	16	2	elec.
37 La Crosse Foundry & Machine Co.	Machinists	2	2	15		15		elec.
38 La Crosse Gas Co.	Gas for City	1	1	4		4	4	2
39 La Crosse Knitting Co.	Knit Goods	2	2	25	125	150	45	1
40 La Crosse Lumber Co.	Lumber, Lath and Shingles	2	2	88		88		10
41 La Crosse Paper Box Co.	Paper Boxes	1	1	5	8	13		elec.
42 La Crosse Plow Works	Agricultural Implements	1	3	100		100	3	2
43 La Crosse Printing Co.	Publishers and Printers	1	1	23	1	24		elec.
44 La Crosse Rubber Mill Co.	Rubber Goods	2	2	25	200	225	3	2
45 La Crosse Soap Co.	Soap	1	1	6		6		1
46 La Crosse Soda Water Factory	Soft Drinks	1	1	3	3	6		1
47 La Crosse Steam Laundry	Laundry	1	1	10	40	50		1
48 La Crosse Steel Roofing & Carruaging Co.	Sheet Metal Work	1	1	35		35	1	elec.
49 La Crosse Vinegar & Pickle Co.	Vinegar and Pickles	1	1	5		5		1
50 La Crosse Wallace Carriage Co.	Carriages and Sleighs	1	1					
51 La Crosse Water Works	Supply Water	1	1	5		5		4
52 Lieberman Mill Co.	Flour Mill	2	1	61		61		4
53 L. S. Meadery Sash Co.	Saddlery and Harness	1	1	35	6	41		1,200
54 La Crosse Steam Laundry	Brewery Work	1	1	30	10	40	1	elec.
55 La Crosse Michel Brewing Co.	Brewing	2	2	53	10	63		3
56 La Crosse Northern Association	Printing and Publishing	1	1	67		67		300
57 Norvett Wood Works	Sash, Doors, etc.	1	1	33		33		elec.
58 Press Publishing Co.	Printing and Publishing	1	1	19	1	20		35
59 Reliable Steam Laundry	Laundry Work	1	1	25		25		40
60 John A. Salzer Seed Co.	Seed Growers	2	2	70	75	145		elec.

61	Sawyer & Austin Lumber Co.	2	2	300	18	318	3	5	400
62	Segecke & Kolhaus Co.	3	3	100	100	100	3	5	250
63	Smith Mfg. Co.	1	1	53	53	53	2	2	10
64	Solberg, Wm.	1	1	10	10	10	1	1	elec.
65	Spicer & Rushman	1	1	8	8	8	1	1	elec.
66	Star Knitting Co.	1	1	28	28	28	2	2	elec.
67	Tisch Bros.	1	1	7	8	15	5	1	wat.
68	Trow Lumber Co.	2	2	50	50	50	4	4	400
69	Velksfreund Printing Co.	1	1	5	5	5	2	2	elec.
70	Volgt & Ritter	1	1	20	20	20	1	1	30
71	West Wisconsin Iron Works	1	1	10	10	10	1	1	elec.
72	Xeo & Clark	1	1	6	6	6	1	1	60
73	George Zeisler & Sons	1	1	8	8	8	2	2	60
Totals		72	29	2,570	949	3,519	145	116	8,962

LA CROSSE.

Under this head are found the orders affected the factories in La Crosse, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Guard elevator; swing doors out.
2	Swing doors out.
3	Swing doors out.
4	Affidavits and permits; swing doors out.
5	Swing doors out.
6	Swing doors out.
10	Swing doors out.
11	Swing doors out; put railings on sides of stairways; guard fly wheel to engine; guard or countersink set screws on line shaft overhead near brick wall.
12	Swing doors out.
13	Affidavits; swing doors out.
14	Swing doors out.
15	Swing doors out; guard emery wheels and provide suction device for all where needed.
16	Swing doors out.
17	Swing doors out.
18	Swing doors out.
20	Swing doors out.
21	Swing doors out; affidavits.
	One-story stone. Discharge one boy; affidavits.
22	Swing doors out; affidavits; guard rail on side of stairs leading to basement.
23	Swing doors out.
24	Guard large fly wheel in basement.
25	Swing doors out.
26	Repair whistle as communication between work room and engineer.
27	Swing doors out.
28	Swing doors out.
30	Swing doors out.
31	Swing doors out.
32	Swing doors out.
34	Swing doors out.
35	Affidavits; swing doors out; discharge one boy under age.
36	Swing doors out; affidavits for ten children.
37	Swing doors out.
38	Swing doors out.
39	Swing doors out.
41	Swing doors out.
42	Swing doors out.
	Three-story brick. Guard emery wheels.
43	Swing doors out.
44	Swing doors out.
	One-story brick. Guard fly wheel to engine; guard set screws on shafting.
45	Swing doors out.
46	Swing doors out.
47	Swing doors out.
48	Affidavits; swing doors out; guard shaft of elevator on second floor with gate or bars.
49	Swing doors out.
51	Swing doors out.
52	Swing doors out.
53	Swing doors out; affidavits.
54	Swing doors out; guard fly wheel to engine; also belt and pulley on engine.
55	Swing doors out.
	One-story brick. Affidavits.

- 56 Swing doors out.
- 57 Guard belt and pulley to cut-off saw in planing mill.
- 58 Swing doors out; guard fly wheel to engine and remove or countersink set screws on shafting.
- 59 Swing doors out.
- 60 Swing doors out.
- 62 Guard drive belt and pulley to hand saw on first floor.
- 63 Swing doors out; provide sand-paper machine with pipes and blower to carry off dust; box belts to same where they go through floor.
- 64 Swing doors out.
- 65 Swing doors out.
- 66 Swing doors out; place railing on side of stairs.
- 69 Affidavits; swing doors out.
- 70 Swing doors out.
- 71 Swing doors out.
- 72 Swing doors out.
- 73 Swing doors out.

MADISON.

The following table, covering several pages, shows for each of the 37 factories in Madison, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firm as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION — MADISON.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.					BUILDINGS.		EMPLOYES.		BOILERS.	
	Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Years.	Number.	Total horse power.			
1. Alford Bros. Brewing Co.	Laundry	1	1	5	24	23	2	120			
2. Breckheimer Brewing Co.	Lager Beer	1	1	2	1	5	1	4			
3. Campbell, Alex.	Feed Mill	1	1	2	4	2	1	150			
4. Capital City Mill Co.	Flour	1	1	4	4	4	1	80			
5. C. & N. W. Round House	Repair Shop	1	1	30	29	30	1	150			
6. C. M. & St. P. Shops	Repair Shop	1	1	30	29	30	1	150			
7. Democrat Printing Co.	Publishing, etc.	1	1	75	15	90	1	elec.			
8. Dexter Curtis, Estate	Collar Racks, etc.	1	1	7	5	12	1	20			
9. Faerberbach Brewing Co.	Lager Beer	1	1	11	6	11	1	70			
10. F. F. F. Steam Laundry	Laundry	1	1	6	14	20	1	35			
11. Fredericksen, N. & Sons	Sash, Doors, etc.	1	1	30	30	30	1	40			
12. Fuller & Johnson	Agricultural Implements	2	2	350	350	350	3	400			
13. Gresham Machine Co.	Machine Tools	1	1	175	175	175	8	lad.			
14. Hart-Tarr Co.	Engines	1	1	25	7	25	2	gas			
15. Hausmann Brewing Co.	Lager Beer	1	1	30	30	30	1	30			
16. King & Walker	Machinery	1	1	3	3	3	1	elec.			
17. Ledwith, James	Buggies, etc.	1	1	8	6	14	1	elec.			
18. Madison Book Bindery	Book Binders	1	1	10	5	16	2	270			
19. Madison Candy Co.	Confectionery	1	1	9	9	9	2	270			
20. Madison City Water Works	Water for City	1	1	28	28	28	2	100			
21. Madison Gas & Electric Co.	Gas for City	2	2	1	6	7	1	12			
22. Madison Laundry Co.	Laundry	1	1	15	1	16	1	elec.			
23. Madison Saddlery Co.	Harness	1	1	4	2	6	1	gas			
24. Malek, V. & Co.	Boots and Shoes	1	1	20	20	20	1	elec.			
25. Peyton, Martin	Foundry	1	1	75	15	90	1	70			
26. Northern Electrical Co.	Dynamite	1	1	8	8	8	1	lad.			
27. Silbermangel, J. J.	Sash, Doors, etc.	1	1	26	4	30	1	20			
28. Standard Tel. & Electric Co.	Telephones	1	1	15	15	15	1	25			
29. Stark Mfg. Co.	Sash, Doors, etc.	1	1	59	59	60	1	25			
30. State Journal	Publishing, etc.	1	1	1	1	1	1	25			

		1	15	15	15	15	15	15	15	30
		1	7	7	13	7	4	1	1	led.
31 Swenson, J. A.	Sash, Doors, etc.	1	1	1	13	7	4	1	1	15
32 Taylor & Gleason	Printing	1	1	1	2	14	1	1	1	gas
33 Teckemeyer Candy Co.	Confectionery	1	1	12	4	4	1	1	1	elec.
34 Tracy, Gibbs & Co.	Publishing	1	1	4	5	16	1	1	1	elec.
35 Winkler, F. D.	Oil Cups	1	1	1	16	16	1	1	1	elec.
36 Wisconsin Botschafter	Publishing, etc.	1	1	1	16	16	1	1	1	elec.
37 Wisconsin Wagon Co.	Carriages and Drays	1	1	1	16	16	1	1	1	elec.
Totals		29	10	1,138	123	1,261	13	26	1,811	

MADISON.

Under this head are found the orders affected the factories in Madison, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out.
2	Swing doors out.
3	Swing doors out.
4	Swing doors out.
7	Swing doors out.
8	Swing doors out.
9	Swing doors out; guard set screws on shafting to mash tub and all shafting where necessary.
10	Swing doors out.
11	Guard belt and pulley to matcher and set screws in shafting to same; guard belts and pulleys to planer and set screws on shafting; guard gearings on sand-paper machine and large belt and pulleys on left side of same and belt and pulley to self-feed saw.
12	Guard set screws on valve gear shaft to engine, also connecting rod; guard fly wheel and belt to planer in wood working shop; guard set screws on shafting in blacksmith shop and all other departments where needed; swing doors out.
	Two and one-half-story brick. Guard or countersink set screws on all shafting in all rooms where necessary and on valve gear shaft to engine, also connecting rod on engine and fly wheel and belt to planer in wood working room on second floor, and all gears, fly wheels, belts and pulleys throughout building where needed for safety.
13	Affidavits: swing doors out; guard all set screws and gears, fly wheels, belts and pulleys and emery wheels where needed and provide suction device for same.
14	Swing doors out.
15	Guard drive belt and pulley and set screws on shaft to keg scrubbing machine; swing doors out.
16	Guard fly wheel and belt to planer in carpenter shop and all exposed set screws on all shafting in all shops; swing doors out; guard emery wheels and provide suction device for same.
17	Swing doors out.
18	Swing doors out.
19	Swing doors out.
20	Swing doors out.
21	Guard set screws on shafting in engine room and fly wheel on pump used for exhausting gas; swing doors out.
	One-story brick. Guard pulley and belt on jack shaft to No. 2 alternator; driving belts and pulleys to Nos. 1 and 2 generators.
22	Guard fly wheel and belt and pulley to engine; guard rail around boiler pit; guard set screws on main shaft in basement; swing doors out.
23	Swing doors out.
24	Swing doors out.
25	Swing doors out; guard fly wheel to gasoline engine and guard emery wheels.
26	Guard driving wheels to iron planer in main shop; guard set screws on main shaft and counter shaft; provide suction device for buffing wheels; swing doors out.
27	Swing doors out.
28	Guard around opening of stairs on first floor; handrail on stairs from first to second floors and guard elevator well in basement; swing doors out.
29	Swing doors out.
30	Swing doors out.

- 31 Swing doors out; guard drive belt and pulley to six-inch sticker or moulding machine; guard belt and pulley to planer in lumber shed and set screws on shafting to same; guard set screws on all shafting where exposed.
- 33 Affidavits; swing doors out.
- 34 Swing doors out.
- 35 Swing doors out.
- 36 Affidavits.
- 37 Swing doors out.

MANITOWOC.

The following table, covering several pages, shows for each of the 29 factories in Manitowoc, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION — MANITOWOC.

NAME OF ESTABLISHMENT.		LOCATION AND BUSINESS.		BUILDINGS.		EMPLOYES.		BOILERS.			
				Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
1	Piegel & Guse		Planing Mill	1	1	17	17	34	17	1	40
2	Brand Printing Co. The		Book Binding	1	1	12	12	24	13	1	40
3	Buerger, H. B. & G. B.		Ship Building	1	1	109	1	110	13	2	140
4	Dorst, H. & Sons		Paper Boxes	1	1	6	13	19	18	7	26
5	Goodrich Repair Shop		Machine Shop	2	1	34	30	64	30	1	250
6	Hanson Wagon Co.		Wagons, Sleighs, etc.	1	1	16	16	32	16	1	20
7	Heyroth, F.		Pearl Buttons	1	1	16	16	32	16	1	20
8	Gunz, Bieser & Co.		Beer	1	1	50	7	57	16	1	85
9	Mantowoc Aluminum Co.		Aluminum Goods	1	1	30	30	60	7	1	40
10	Mantowoc Building Supply Co.		Office Fixtures	1	1	20	20	40	30	1	85
11	Mantowoc Clay Co.		Brick	1	1	5	5	10	5	2	119
12	Mantowoc Electric Light Co.		Electric Light and Power	1	1	27	3	30	3	2	300
13	Mantowoc Glue Co.		Glue	1	1	100	25	125	6	1	45
14	Mantowoc Land Plaster Co.		Land Plaster	1	1	5	5	10	5	6	6
15	Mantowoc Pea Packing Co.		Canned Goods	1	1	189	189	378	5	3	300
16	Mantowoc Plot		Publishers, etc.	2	1	65	65	130	65	1	25
17	Mantowoc Seating Co.		School Furniture	1	1	7	7	14	7	1	elec.
18	Mantowoc Steam Boiler Co.		Boilers and Smoke Stacks	1	1	5	5	10	5	1	elec.
19	Oriental Mills		Flour and Feed	1	1	5	5	10	5	1	12
20	Palace Steam Laundry		Laundry	1	1	85	85	170	85	3	140
21	Rahr, Wm., & Sons Co., The		Dealers in Coal	1	1	74	74	148	74	3	120
22	Reiss, C. Coal Co.		Machinery	1	1	30	30	60	30	1	60
23	Richards Iron Works		Vinegar	1	1	7	7	14	7	1	70
24	Richter, A. M., & Son		Paper and Cigar Boxes	1	1	4	10	14	14	1	40
25	Schnorr Bros.		Brewers and Malsters	1	1	15	15	30	15	2	155
26	Schrethart Brewing Co.		Agricultural Implements	1	1	70	70	140	70	2	145
27	Smalley Mfg. Co.		Laundry	1	1	5	6	11	7	2	25
28	Snow Flake Laundry, The		Tools	1	1	1	1	2	5	1	25
29	Willott, J., & Sons		Totals	28	5	922	56	978	20	37	2,438

MANITOWOC.

Under this head are found the orders affecting the factories in Manitowoc, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Affidavits; guard all belts and pulleys on all machines; on first and second floor; guard set screws on shafting and counter shaft; guard emery wheel; swing doors out.
2	Affidavits; swing doors out.
3	Guard sets crews on shafting in saw and planing mill, also set screws on planer; swing doors out.
4	Affidavits; swing doors out; guard set screws on shafting.
5	Guard emery wheels; swing doors out.
6	Two-story wood. Guard band saw on second floor.
6	Guard band saw on bottom on first floor; guard belts and pulleys on shaper; swing doors out.
7	Swing doors out.
8	Swing doors out.
9	Swing doors out; fan in buffing room.
10	Guard set screws in grinding room, also on first floor on all shafting and countershaft; set screws on planer; guard belts and pulleys on moulding machine and both planers on first floor; guard emery wheels; suction device for emery wheels in grinding room; swing doors out.
11	Affidavits.
12	Swing doors out.
13	Guard belts and pulleys on meat cutter in basement; swing doors out; guard on south side of elevator on second floor.
14	Swing doors out.
15	Swing doors out.
16	Swing doors out.
17	Affidavits; guard in running gear on J. A. Fay & Co. machine, also guard in running gear on Williamsport Machine Co.'s sticker on first floor; guard belts and pulleys on same machine; belts and pulleys on school seat planer; guard emery wheels; swing doors out; guard single headed sticker on first floor.
	Three-story wood. Rail around fire escape.
	One-story wood. Guard set screws on shafting in grinding room.
18	Swing doors out.
19	Remove or guard all set screws on all shafting and countershaft; swing doors out.
20	Swing doors out.
21	Swing doors out.
23	Swing doors out.
24	Swing doors out.
25	Affidavits; rail on stairway.
26	Swing doors out.
27	Remove or guard all set screws on shafting and countershaft; guard band saw on bottom both sides; guard emery wheels and put on suction device; swing doors out.
28	Swing doors out.
29	Swing doors out.

MARINETTE.

The following table, covering several pages, shows for each of the 25 factories in Marinette, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION — MARINETTE.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYERS.		BOILERS.			
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
1	Argus Co., The	1	1	3	3	6			elec.
2	Eagle Printing Co.	1	1	187	7	12	1	5	285
3	Hamilton, Merryman & Co.	1	1	15		187		3	375
4	Hopper, H. D.	1	1	30		15	1	1	100
5	Linden & Miller	1	1	165		30	1	10	500
6	N. Ludington & Co.	1	1	19		165		1	wat.
7	Marinette Flour Mill	1	1	89		19	1	1	125
8	Marinette Iron Works Mfg. Co.	2	1	188		89	1	6	450
9	Marinette Lumber Co.	3	1	78		198	2	2	180
10	Marinette & Menomonee Box Co.	1	1	143	16	78	10	2	275
11	Marinette & Menomonee Paper Co.	8	1	28		139		9	200
12	Marinette & Menomonee Paper Co.	1	1	32		28		1	100
13	Marinette Planing Mill	1	1	5	5	10	1	1	gas
14	Marinette Tribune	1	1	100		10		11	880
15	Menomonee Lumber Co.	3	1	196		100	2	6	540
16	Merryman, R. W., & Co.	1	1	110		196		7	800
17	Merryman Mfg. Co.	1	1	8	3	11	1	1	elec.
18	North Star Publishing Co.	1	1	2	9	11		2	12
19	Parisian Laundry	1	1	5		5		2	150
20	Prescott, E. C.	1	1	180		180		5	600
21	Sawyer, Goodman & Co.	1	1	92		92		5	375
22	Stephenson Mfg. Co., The	1	1	4	10	14		1	16
23	Union Steam Laundry	1	1	10		10	5	1	30
24	West Shore Wood Co.	1	1	82		82		8	1,000
25	Whitbeck, H. W. Co., The	1	1						1,000
Totals		36	2	1,786	53	1,839	25	87	6,913

MARINETTE.

Under this head are found the orders affecting the factories in Marinette, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out.
2	Swing doors out.
3	Guard emery wheels.
4	Swing doors out; guard fly wheel in engine room, both east and west end of same; box all belts and pulleys on second floor.
5	Affidavits; guard belts and pulleys on planer; remove set screws on planer; guard band saw, also remove set screws on same; guard fly wheel on east end; railing on roller's walk in engine room; guard band saw on bottom on second floor.
6	Affidavits; guard band mill gear in basement; guard emery wheels; swing doors out.
7	Swing doors out.
8	Guard set screws on all shafting and countershaft; suction device put on emery wheels; swing doors out.
9	Two-story wood. Swing doors out; guard pulley on line shaft on second floor; guard emery wheels.
10	Affidavits; swing doors out; guard fly wheel in engine room on east side; brace guards on pulley on first floor; also set screws.
11	Guard belt and pulley on east end of No. 1 wet machine; rail on walk between Nos. 2 and 3 wet machines; repair rail around main drive belt; also guard grinder pulleys in pulp room; swing doors out. One-story brick (Pulp room). Guard belt and pulley on east end of No. 1 wet machine; guard core wheels in basement. One-story brick (Wood room). Guard belt and pulley on clipper. Three-story brick. Put in fan or suction device.
12	Guard belt and pulley on winder shaft; swing doors out.
13	Affidavits; guard all belts and pulleys on all machines, second floor; guard band saw at bottom on second floor; guard in running gear on matcher; guard fly wheel in engine room, also on west side of engine to cylinder; guard emery wheels; guard belts and pulleys on matcher and surfacer on first floor, the first two machines on east end.]
14	Swing doors out.
15	Affidavits.
16	Guard belts and pulleys on shingle machine drivers; guard emery wheels; swing doors out.
17	Guard emery wheels; swing doors out.
18	Affidavits; swing doors out.
19	Swing doors out.
20	Swing doors out.
21	Enclose double gear in basement; guard emery wheel on third floor on upright saw gummer; swing doors out.
22	Affidavits; guard emery wheels; swing doors out.
23	Swing doors out.
25	Guard core gear for band mill in basement; swing doors out.

MARSHFIELD.

The following table, covering several pages, shows for each of the 17 factories in Marshfield, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION — MARSHFIELD.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYEES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Number.	Under 16 years.	Number.
1 Billie, Hans	Contractor	1	1	15	...	15	1	1
2 Hafer & Kalsched	Lumber, etc.	1	...	35	...	35	...	1
3 Linster & Rasmussen	Flour and Feed .....	...	1	6	...	6	...	1
4 Marshfield Bedding Co.	Bedding	1	...	35	...	35	3	2
5 Marshfield Brewing Co.	Brewery	1	...	15	...	15	...	2
6 Marshfield Electric Light & Power Co.	Light and Water	1	...	6	...	6	...	2
7 Marshfield Iron Co.	Machinery	1	...	8	...	8	...	...
8 Marshfield Slave Co.	Staves and Heading	2	...	20	...	20	...	1
9 Metelke Bros.	Bicycles, etc.	1	...	6	...	6	...	...
10 Roddis Veneer Co.	Veneer, etc.	2	...	105	...	105	8	3
11 Upham Mfg. Co.	Flour and Feed .....	...	2	7	...	7	...	...
12 Upham Mfg. Co.	Furniture	3	...	160	...	160	...	...
13 Upham Mfg. Co.	Lumber, etc.	1	...	350	...	350	20	...
14 Upham Mfg. Co.	Planing Mill	1	...	8	...	8	...	...
15 Upham Mfg. Co.	Power House	1	...	6	...	6	...	...
16 Wisconsin Hoop Co.	Lumber, etc.	1	...	20	...	20	...	...
17 Wright, Thomas	Interior Wood Work	1	...	15	...	15	...	1
Totals .....	.....	19	3	813	...	813	32	20
								1,965

NAME OF ESTABLISHMENT.

LOCATION AND BUSINESS.

BUILDINGS.

Under three
stories in
height.3 or more
stories in
height.

EMPLOYEES.

Males.

Females.

Number.

Under 16
years.

BOILERS.

Number.

Total horse
power.

MARSHFIELD.

Under this head are found the orders affecting the factories in Marshfield, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out; guard all set screws; guard emery wheel.
2	Guard all set screws on shafting and repair floor and add a new step on the inside stairway.
3	Swing doors out.
4	Swing doors out; guard fly wheel and engine crank.
5	Swing doors out; guard set screws on shafting.
6	Swing doors out; guard two fly wheels to the two engines in the electric light room.
7	Swing doors out.
8	Connection from engine room to heading mill and to excelsior building; cover all set screws on shafting; guard on small planer.
9	Swing doors out.
10	Guard set screws on all shafting; extra plank to roller's walk; balance wheel to heading saw; box counter shaft and belt to table saw on second floor; guard gear to glue machine; file affidavits.
13	One-story brick. Swing doors out; guard set screws on all shafting; extra plank on roller's walk; guard governor wheel on Payee engine, also valve gear; discharge seven boys. Two-story frame. Guard all set screws on shafting; bars on first floor to elevator; guard set screws to top roller of sanding machine, also in running gear and belt; guard lower wheel to four band saws.
	Two-story frame (Shipping room). Lift bars on each side of elevator on first floor; fill in opening of elevator well on second floor.
	One-story frame. Guard all set screws on shafting.
	Three-story frame. Guard all set screws on shafting, main belt, second floor; drive belt on third floor.
16	Guard fly wheel; guard set screws on all shafting.
17	Swing doors out; connections from factory to engine room; guard fly wheel and pulley to engine.

MENASHA.

The following table, covering several pages, shows for each of the 17 factories of Menasha, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

MENASHA.

Under this head are found the orders affecting the factories in Menasha, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out.
3	Swing doors out; guard stairs and opening with rail.
4	Guard fly wheels on both sides of engines; swing doors out; rail on sides of stairs and around opening at top; guard belt and pulley to corn sheller; guard bevel gear on shaft in mill.
5	Swing doors out.
6	Guard fly wheel on engine; guard belt and pulley to matcher; box drive belt through floor; railing around stair opening; swing doors out.
7	Swing doors out; guard eccentric; railing on stairs; guard emery wheels.
8	Swing doors out; guard emery wheels. Two-story wood. Suction device for emery wheels. Two-story wood. Affidavits; suction device on emery wheels. Four-story wood. Box large drive belt on second floor.
9	Swing doors out.
10	Swing doors out; guard belt to Westinghouse machine; guard belt to Western Electric machine; guard fly wheels.
11	Fan ordered; swing doors out.
12	Swing doors out.
13	Affidavits and permits; guard fly wheel to engine. One-story wood and brick. Cover well in machine room; guard set screws on driving shaft to brick machine.
14	Affidavits; guard drive wheels to engine next to front door; take off shaft running idle outside of engine house or remove set screws.

MENOMONIE.

The following table, covering several pages, shows for each of the 14 factories in Menomonie, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION.

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FACTORY INSPECTION — MENOMONIE.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYEES.				BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
1 Burkhardt & Son	Brayers	1	1	1	1	7	7	1	45
2 Dunn County News	Printing	1	1	3	3	3	3	1	wat
3 Dunn County Iron Works	Refrigerating	1	1	4	4	4	4	1	24
4 Ebert, F. R. & Co.	Sash Doors, etc.	2	1	10	10	10	10	1	35
5 German Printing Co.	Printing	1	1	5	5	5	5	1	wat
6 Herren Planing Mill	Lumber	1	1	5	5	5	5	1	35
7 Kemke & Anderson	Machine Shop	1	1	6	6	6	6	1	20
8 Knapp, Stout & Co.	Lumber	4	1	500	500	500	3	11	wat
9 Menomonie Times	Printing	1	1	5	5	5	5	1	6
10 Menomonie Electric Light & Power Co.	Light and Power	1	1	3	3	3	3	1	wat
11 Menomonie Steam Laundry	Laundry	1	1	4	4	4	4	1	3
12 Menomonie Water Works	Supply Water	1	1	1	1	1	1	1	80
13 Menomonie Hydraulic Pressed Brick Co.	Brick	2	1	125	125	125	11	2	180
14 Wisconsin Pressed Brick Co.	Brick	1	1	69	69	69	69	1	100
Totals .....	.....	18	1	743	5	748	15	23	508

MENOMONIE.

Under this head are found the orders affecting the factories in Menomonie, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out.
2	Swing doors out: communications between work room and engineer.
3	Swing doors out: guard bevel gear in machine room, north side; cover set screws on rollers in machine room, north side.
4	Swing doors out: guard spur beveled gear, south side, in machine room.
5	Swing doors out.
6	Swing doors out.
7	Swing doors out.
8	Swing doors out.
9	Swing doors out.
10	Swing doors out: guard standing belt to two barrel pressers, west side second floor.
	Three-story ironclad. Railing on stairs, each floor; discharge two children under age; file affidavits.
11	Swing doors out; file affidavits; discharge four children under age.
12	Swing doors out.
13	Swing doors out.
14	Swing doors out: communication between work room and engineer.
15	Swing doors out.
16	Swing doors out: keep affidavits on file.
17	Swing doors out.

MERRILL.

The following table, covering several pages, shows for each of the 13 factories in Merrill, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION - MERRILL.

NAME OF ESTABLISHMENT.

LOCATION AND BUSINESS.

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FACTORY INSPECTION.

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	NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
			Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.
1	American Hide & Leather Co.	Leather	1	1	60	...	60	...	3
2	Anson Hixon Sash & Door Co.	Sash, Doors, etc.	...	1	180	...	180	14	2
3	Gilkey & Anson	Lumber, Lath, etc.	3	...	165	...	165	3	8
4	Houes Steam Laundry	Laundry	1	...	4	4	8	...	8
5	Leidiger Brewing Co.	Beer	...	1	6	...	6	...	1
6	Merrill Excelsior Co.	Excelsior	1	...	7	...	7	...	1
7	Merrill Iron Works	Machinery	1	...	7	...	7	...	1
8	Merrill Lumber Co.	Lumber, Lath and Shingles	...	2	136	...	136	...	5
9	Merrill Railway & Lighting Co.	Furnish Light and Power	1	...	2	...	2	...	4
10	Miller, C. P., Lumber Co.	Lumber, Lath, etc.	2	...	88	...	88	...	9
11	Scott, T. B., Lumber Co.	Dressing Lumber	1	...	169	...	169	...	...
12	Strange, A. H., Co.	Sash, Doors, etc.	1	1	375	...	375	75	6
13	Wright, H. W., Lumber Co.	Planing Lumber	2	...	135	...	135	...	2
	Totals	...	16	3	1,334	4	1,338	92	42
									3,870

Total horse power.

MERRILL.

Under this head are found the orders affecting the factories in Merrill, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.

Orders Issued.

- 1 Swing doors out.
- 2 Swing doors out; guard belt and drive pulley on panel planer; guard belt and drive pulley on moulding machine; box drive belts through floor on first floor to main building; file affidavits; fire escape; one boy under age discharged.
- 3 Affidavits; guard drive wheel and belts to dynamos and engine; guard all exposed set screws on shafting or provide collars with countersunk set screws.
Two-story wood. Countersink set screw on collar to feed pulley planers in each end of mill.
- 4 Swing doors out.
- 5 Swing doors out.
- 6 Guard fly wheel to press or remove set screw and key on shaft to same.
- 7 Swing doors out.
- 8 Guard set screw or gear and shaft in shingle mill, and all exposed set screws on shafting.
One-story wood. Box drive belt and pulley through floor.
- 9 Swing doors out.
- 10 Guard set screws on drive wheels and shafting.
- 11 Guard or countersink set screws on shaft to large emery wheel; guard belts and feed wheels with exposed set screws on planing machines in mill.
- 12 Guard feed roll belt to surfacer No. 1; guard main belt and pulley to surfacer in factory No. 2; change two elevator boys; discharge twenty-nine children under age.
- 13 Guard set screws on line shaft; guard line shaft for lathe mill and all shafting on first floor.

OCONTO.

The following table, covering several pages, shows for each of the 14 factories in Oconto, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION - OCONTO.

FACTORY INSPECTION.

963

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.
1 Aubry Tannery & Leather Co.	Tanners	1	1	5	5	10	.....	1
2 Citizen Light & Fuel Co.	Electric Light	1	1	3	3	6	.....	2
3 Falls Mfg. Co.	Paper and Pulp Mill	3	3	150	10	160	.....	4
4 Holt Lumber Co.	Lumber	3	3	240	.....	240	1	5
5 Natz, John	Flour and Feed	.....	1	5	.....	5	.....	1
6 Oconto Brewing Co.	Brewers	1	1	5	.....	5	.....	1
7 Oconto City Water Supply Co.	Supply Water	1	1	5	.....	5	.....	3
8 Oconto Company, The	Planing Mill	1	1	38	.....	38	.....	2
9 Oconto Company, The	Saw Mill	4	1	250	.....	250	4	6
10 Oconto County Enterprise	Printing	1	1	3	1	4	1	1
11 Oconto County Reporter	Printing	1	1	3	3	6	.....	1
12 Spies, Jacob	Saw Mill	2	2	50	.....	50	.....	2
13 Union Mfg. Co.	Lumber	1	1	15	.....	15	.....	1
14 Witke Canning Co.	Canning	2	2	60	60	120	20	2
Totals	.....	27	2	823	74	897	26	31
								2,472

Total horse power.

OCONTO.

Under this head are found the orders affecting the factories in Oconto, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out.
2	Swing doors out.
3	Swing doors out. One-story wood. Guard rope drive in basement. One-story wood (Wet machine room). Guard elevator on south side, first floor; remove set screws; discharge two children under age.
4	Guard pulley on first floor that runs knee belt; guard fly wheel on first floor on east, north and west side; guard emery wheels. Planing mill, one-story wood. Affidavits: guard set screws on all shafting, also on all planers; guard emery wheels. Saw mill, two-story wood. Guard on rip saw in basement; guard four gears in basement; guard emery wheels.
5	Swing doors out.
6	Swing doors out.
7	Swing doors out.
8	Planing mill. Affidavits: guard in running gear on rip saw, also set screws on same; guard belt and pulley on two Triumph planers, also set screws on same, also all in running gears on same; guard emery wheel; swing doors out. Saw mill. Affidavits: guard three A. M. Rich No. 2 automatic saw sharpeners; guard emery wheel No. 3 band re-saw automatic grinder.
10	Swing doors out.
11	Swing doors out.
12	Swing doors out.
13	Guard emery wheels.
14	Guard all set screws on all shafting and countershaft; swing doors out.

OSHKOSH.

The following table, covering several pages, shows for each of the 70 factories in Oshkosh, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION - OSHKOSH.

	NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
			Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.
1	Allen & Weldner	Printers and Binders	1		10	9	15	1	gas
2	Augustin, Henry	Buggies and Wagons	1		5		5		30
3	Badger Canning Co., The	Canned Goods	1		23	20	43		elec.
4	Badger Plating Works, The	Nickle Plating	1		2		2		2
5	Baird Mfg. Co., The	Bicycles	1		10		10		elec.
6	Battis Bros.	Boilers and Tanks	1		6		6		2
7	Beaumont Chase Co.	Furniture		2	170		170	15	200
8	Brand, Robert, & Son	Office Furniture		1	11		11		13
9	Buckstaff, Edwards & Co.	Chairs and Caskets		3	198	53	251	24	
10	Campbell & Cameron Co.	Boxes	1		41		41	4	80
11	Casket Hardware Co., The	Casket Hardware	1		15	2	17		65
12	Challoner, George, & Co.	Machinery	2		50		50		1,400
13	Citizens Traction Co.	Power House	1		65		65		elec.
14	Clark, L. Carriage Works	Carriages and Wagons	2		121	4	125		150
15	Conk, Lumber Co.	Saw Mill	1		28		28		elec.
16	Conk & Brown Lime Co.	Lime and Brick	1		25		25		40
17	Davis, Hanson Co.	Pumps and Cylinders	2		27		27	75	4
18	Diamond Match Co.	Matches	5		65	175	240		240
19	Foot Bros.	Flour and Feed		1	8		8		150
20	Gillen Bros.	Laundry	1		3	12	15	1	35
21	Gillingham & Son	Carriages and Sleighs	1		5		5		15
22	Globe Printing Co.	Printers	1		11		11		20
23	Gould Mfg. Co.	Sash and Doors	4		181		181		180
24	Guns Bros.	Carriages and Sleighs	1		5		5		325
25	Hafner Lumber Mfg. Co.	Sash and Doors	2		136	2	138	26	3
26	Hayes, E. B. Machine Co.	Machinery	2		45		45	3	55
27	Hays Water Proof Binding Co.	Binding	1		9	25	27	4	
28	Holland, Chas.	Printer	1		5		5		35
29	Hicks Printing Co., The	Printers and Publishers	1		22	2	24		2
30	Hollister, Amos, & Co.	Saw Mill	1		120		120		

FACTORY INSPECTION—OSHKOSH—Continued.

NAME OF ESTABLISHMENT.		LOCATION AND BUSINESS.				BUILDINGS.		EMPLOYES.			BOILERS.	
				Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.	
31	Laab's, Fred, Sons	Flour	1	1	6	6	6	6	6	2	170	
32	Levy, J. D.	Brooms and Brushes	1	1	5	5	5	5	5	3	595	
33	McMillan, R., & Co.	Sash, Doors and Blinds	2	3	163	10	173	14	14	3	350	
34	Morgan Co., The	Sash, Doors and Blinds	1	1	334	3	337	22	22	1	25	
35	Morgan Mattress Co.	Mattresses	1	1	9	7	16	18	18	1	25	
36	Neville, T.	Carriages and Sleighs	1	1	18	1	19	19	19	1	25	
37	Northwestern Sewer Pipe Co.	Sewer Pipe	1	1	10	10	20	10	10	1	25	
38	Oshkosh Bedding Co.	Mattresses	1	1	12	10	22	1	1	2	500	
39	Oshkosh Brewing Co.	Lager Beer	1	1	20	20	40	20	20	2	150	
40	Oshkosh Cigar Box Factory	Cigar Boxes	1	1	1	6	7	7	7	1	25	
41	Oshkosh Clothing Mfg. Co.	Overalls and Jackets	1	1	4	46	50	21	21	4	elec.	
42	Oshkosh Electric Light & Power Co.	Electric Light	1	1	5	5	10	5	5	4	600	
43	Oshkosh Furniture Co.	Bedroom Suits	1	2	100	100	200	8	8	1	150	
44	Oshkosh Gas Light Co.	Manufacture Gas	1	1	12	12	24	12	12	2	300	
45	Oshkosh Logging Tool Co.	Logging Tools	1	1	35	35	70	1	1	1	90	
46	Oshkosh Paint Co.	Paint and White Lead	1	1	5	5	10	13	13	1	50	
47	Oshkosh Shirt Co.	Shirts	1	1	1	12	13	13	13	1	elec.	
48	Oshkosh Times	Printers and Publishers	1	1	18	2	20	20	20	1	10	
49	Oshkosh Water Co.	Water for City	1	1	6	6	12	5	5	4	350	
50	Palme Lumber Co.	Sash, Doors and Blinds	2	1	63	22	85	53	53	8	lad.	
51	Palme Lumber Co.	Manufacture Boxes	2	2	105	105	210	27	27	7	250	
52	Palace Steam Laundry	Laundry	1	1	2	9	11	11	11	1	20	
53	Radford Bros.	Saw Mill	1	1	77	77	154	77	77	1	lad.	
54	Radford Bros.	Sash, Doors and Blinds	2	2	255	255	510	24	24	4	200	
55	Rahr, Charles, Jr.	Lager Beer	1	1	5	5	10	6	6	1	75	
56	Ransom Perry	Machinery	1	1	6	6	12	6	6	1	12	
57	Reliance Boiler Works	Boilers	1	1	8	8	16	8	8	1	65	
58	Schmidt, H. P.	Flour	1	1	8	8	16	8	8	1	150	
59	Schmitt Bros. Trunk Co.	Trunks and Valises	1	2	73	49	122	29	29	1	100	
60	Schneider, Louis	Straw Covering	1	1	10	24	34	1	1	1	18	

61	Streich, A., Bros.	Wagons, Trucks, etc.	1	50	50	1	100
62	Streich, Gabriel	Wagons, Trucks, etc.	1	28	28	1	50
63	Thompson Carriage Co.	Buggies and Carriages	1	57	57	2	60
64	Troy Steam Laundry	Laundry	1	2	7	1	70
65	Union Iron Works	Engines	2	30	30	1	80
66	Warwick & Cole Co.	Coal Dealers	1	8	8	1	gas
67	Williamson & Libby Lumber Co.	Sash, Doors and Blinds	4	200	200	12	375
68	Wilson Bros.	Buggies and Wagons	1	10	10	1	elec.
69	Wisconsin Art Glass Co.	Art Glass	1	12	12	3	elec.
70	Wisconsin Grass Twine Co.	Binder Twine	3	50	165	17	150
Totals			76	24,390	676	96	7,483

OSHKOSH.

Under this head are found the orders affecting the factories in Oshkosh, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
2	1 Affidavits; guard set screws on shafting; also guard key on Chandler & Price printing press, on first floor; guard set screws in shafting on second floor; closet for ladies; swing doors out.
3	Guard all set screws on first floor; guard fly wheel in engine room on north end.
4	Communication between work room and engineer; swing doors out; guard elevator on first floor on north and south sides, with lift bars.
5	Set screws on shafting on first floor guarded; guard emery wheels; swing doors out.
6	Swing doors out.
7	Guard set screws on second floor on tenoning machine, also guard in running gear on sticker on second floor; guard set screws on first floor on shafting; guard on running gear on R. & H. sticker on first floor; guard emery wheels; swing doors out.
	Four-story ironclad. Repair guard on elevator on second floor; affidavits.
8	Guard main belt on electric motor; guard set screws on shaft that drives shaper; also set screws on shaft of combination saw; also set screws on first floor on shafting; guard in running gear on Bass planer, first floor; guard both band saws on first floor; guard emery wheels.
9	Guard belts and pulleys on sander, polisher, on second floor; guard belts and pulley on No. 5 planer; guard in running gear on Bass machine; also belts and pulleys on same; guard all set screws on first floor; guard emery wheels; swing doors out; guard elevator on east and west sides and lift bars on south and north sides; guard main Dowe belt on third floor; rail on runway on north side of main factory to warehouse on the north; repair steps on outside north of main factory; set screws removed or guarded; rail on northeast corner of building near emery wheels; fire escape on south side of main factory building.
	Five-story wood. Fire escape on south side of building with iron platforms; rail fastened and braced on both runways to warehouse on south.
10	Affidavits; guard band saw on second floor; guard all set screws on first and second floors; guard emery wheels; swing door out.
11	Swing doors out.
12	Guard all set screws, guard fly wheel in engine room; guard belts and pulleys on planer; swing doors out.
13	Swing doors out.
14	Guard belts and pulleys to No. 4 planer; guard belts and pulleys No. 32 machine, H. P. Smith Machine Co.; guard band saw wheel; guard belts and pulleys to planer; guard belts and pulleys of machine No. 142; swing doors out.
	One-story brick. Remove all set screws on shafting.
15	Remove all set screws on shafting on first floor; guard fly wheel in engine room, west side; guard emery wheels.
16	Guard in running gear on windlass; swing doors out.
17	Guard all set screws on first floor in machine shop; swing doors out.
	One-story wood. Guard all set screws in moulding shop, also in grinding rooms; swing doors out.
18	Guard all set screws on first floor; guard belt to main shaft; swing doors out; order fan put in.
	One-story brick. Communications between work room and engineer.
	Two-story brick. Communications between work room and engineer; guard or remove set screws on second floor.
	One-story brick. Set screws guarded or removed.
	One-story brick (machine shop). Guard or remove all set screws.
19	Guard set screws on shafting on first floor; swing doors out.
20	Guard large mangle; swing doors out.

- 21 Guard band saw on bottom; guard in running gear on planer, also belts and pulleys on same; guard set screws on shafting; guard emery wheels.
- 22 Doors swing out.
- 23 Guard belts and pulleys on planers on first floor; guard belt and pulleys to band Re saw; guard belts and pulleys on pony planer; guard belts and pulleys on Dowel sticker, also moulding sticker; guard emery wheels; doors swing out; guard elevator on south, also lift bars on west and east side.
- Two-story iron. Communication between work rooms and engineer; guard elevator on first floor on north and south side and lift bars on east and west side; guard emery wheel.
- Two-story ironclad. Lift bars placed on elevator on second floor; guard elevator on first floor on east and west side and lift bars on north and south side; affidavits.
- 24 Doors swing out; repair runway to second floor.
- 25 Guard belts and pulleys on planer, first floor; guard running gear on all rip saws on first floor; guard slat sticker; guard on running gear in three slat sticker, first floor; guard Re saw on first floor; guard emery wheels; guard in running gear on Rowley & Herman polisher, second floor; guard all five stickers on second floor. Rowley & Herman; guard belts and pulleys on sticker, also T machine on second floor; guard all belts and pulleys on all machines, second floor; guard elevator on first floor, north and south side and lift bars on east and west side; file affidavits.
- 26 Affidavits; doors swing out.
- 27 Affidavits; guard all set screws on all shafting; doors swing out.
- 28 Doors swing out.
- 29 Guard set screws on first floor on shafting; guard main Dowe belt and pulley on engine on first floor; doors swing out.
- 30 Guard all set screws on all planers on first floor; guard set screws on shaft that runs shingle machine; guard set screws on shafting on first floor; repair stairway on outside and place rail on same; splitter put on rip saw on first floor.
- 31 Doors swing out.
- 32 Doors swing out.
- 33 Doors swing out; guard belt to sticker No. 290; guard belt to mortiser; fan in engine room.
- 34 Guard belt and pulleys on blower in engine room; guard belts and pulleys on sander, second floor, main belt; guard belts and pulleys on matcher on first floor; guard belts and pulleys on Re saw; guard emery wheels; doors swing out; affidavits.
- 35 Guard emery wheels; doors swing out.
- 36 Doors swing out.
- 37 Affidavits; guard set screws on third floor; guard in running gear on cotton opener; guard fly wheel on first floor; guard all set screws on first floor; door swing out; guard elevator on second and third floor; guard elevator on first floor by placing lift bars on east and west sides.
- 38 Doors swing out.
- 39 Doors swing out.
- 40 Affidavits; doors swing out; remove bicycles from hallway.
- 41 Fan in engine room; door swing out.
- 42 Guard all set screws on first floor; guard in running gear on both Bass "Machine Co.'s Planers" on first floor; guard in running gear on R. & H. sticker; guard in running gear on sticker on second floor; guard emery wheels; doors swing out; affidavits.
- Lift bar on second floor on south side; inside lift guards on third and fourth floors; cut out enough flooring on third floor so elevator man can run elevator easily.
- 44 Guard in running gear on coke crushers; guard set screws on main shaft in engine room; doors swing out.
- 45 Affidavits; communication between work room and engineer; guard emery wheels; doors swing out.
- 46 Guard set screws on first floor on all shafting; guard fly wheel in engine room on east side, also on south and west side of driver; guard elevator on first and second floors and lift guards or bars placed on north side on each floor; repair stairway leading to second floor; doors swing out.
- 47 Guard set screws on shafting on first floor; also set screws on shafting in basement; repair floor on second floor.
- 48 Doors swing out.
- 49 Doors swing out.
- 50 Guard set screws in machine shop; guard in running gear on planer, also belts and pulleys on same; guard all belts and pulleys on all machines on first floor; guard all belts and pulleys on second floor; guard all belts and pulleys on third floor; guard emery wheels; order lift bars on elevator on east side.
- Two-story wood. Cover running gear, also chain feed working skimmer; guard out running gear on skimmer veneer department; cover clutch on main shaft veneer department; cover pulley running counter shaft of rip saw; guard pulleys on shaft north end running press, also clutch pulley, also pulleys on west end of press; doors swing out; guard belt and pulleys No. 7983 planer; guard set screws on shaft.
- Two-story ironclad. Guard belts and pulleys on all machines on second floor, also guard set screws on second floor; cover clutch pulley on second floor, in door and moulding department; guard emery wheels; guard belt and pulleys in moulding department, running main shaft.

- 51 Affidavits; guard belts and pulleys on shingle machine; second floor in mill; guard in running gear on second floor on pool wheel; guard emery wheel.
One-story wood. Guard band saw; guard all belts and pulleys on all machines on first floor; fasten down box that protects belt on machine No. 223; guard in running gear on both gang rip saws; suction device on emery wheel; eleven children under age discharged.
- 52 Affidavits; guard set screws on all ironing machines.
- 53 Repair stairway from first to second floor; also rail to be placed on same east side.
- 54 Boy under 14 discharged; guard in running gear on panel planer; guard belts and pulleys; guard belt and pulleys on No. 4 Hoyt's planer; guard belts and pulleys on matcher; guard or remove all set screws on first floor; guard in running gear on Re saw, also set screws on same and guard belts and pulleys on same; guard Houston's moulding stickler in running gear on belts and pulleys; repair floor in engine room; No. 9 elevator guarded on north and place lift guards on east and west and south sides; guard head on fan panel machine; guard in running gear on Don stickler; guard gear of rail boring machine; guard in running gear on two Berlin polishers, also belts and pulleys on same; guard shaper head on No. 2 R. & H. shaper; box jointer head on joining machine; guard stile boring machine; guard in running gear on two slat sticklers; guard hand saw, also belts and pulleys on same; guard in running gear on three Houston sticklers; guard belts and pulleys on Hoyt's planer on first floor on west side; also remove set screws on same; doors swing out; place fan in engine room.
Two-story wood. Guard elevator on north and south sides, also lift bars on east and west sides; guard east and west sides on elevator on north side of building; brace rail on bridge to main factory building.
- 55 Doors swing out.
- 56 Guard belts and pulleys on drilling machines; guard all set screws in shop; guard in running gear; gear on both lathes; guard emery wheels.
- 57 Cover gearing on sheet iron roller on west.
- 58 Guard all set screws in basement on shafting; guard all set screws on first floor; doors swing out.
- 59 Affidavits; guard all set screws on first floor; doors swing out.
Two-story ironclad. Remove or guard set screws on Re saw shaft, also guard in running gear on same; also all set screws on first floor guarded; guard emery wheels.
- 60 Affidavits; remove or guard all set screws on shafting; seats provided for female employees; doors swing out.
- 61 Guard in running gear on sanding machine; also belts and pulleys; guard belts and pulleys to shaper and circle saw; also guard in running gear on planer, also belts and pulleys; guard emery wheels.
- 62 Remove or guard all set screws on first floor; guard belts and pulleys on planer in wood shop; doors swing out; guard elevator on north side of first floor.
- 63 Cover or remove all set screws; guard belts and pulleys on planer; guard band saw and belts and pulleys on same; have splitter put on circular saw;; guard belts and pulleys to shaper; fire escape.
- 64 Doors swing out.
- 65 Communication from work room to engineer; guard emery wheel.
- 66 Guard fly wheel on gasoline engine, also pulley on same; guard set screws on shafting; doors swing out; close openings in attic or third floor; guard hoist.
- 67 Discharged two boys under 14; remove all set screws on first floor; remove all set screws in filing room; guard pony planer on second floor; guard belts and pulley No. 2523 sander, second floor, on west and east sides; also other sander along side of above guard, same on west side; guard emery wheels; doors swing out; closets cleaned twice a week, dry system; guard elevator on first floor on east and west sides and lift bars on north and south sides.
bar on east and west sides.
Two-story wood. Guard elevator on first floor on north and south and lift
Two-story wood (Warehouse 1). Guard elevator on first floor and lift gates or bars.
Two-story wood (Warehouse 2). Guard elevator on first floor and lift gates or bars.
- 68 Doors swing out; guard elevator on second and third floors on west and north and east sides, and lift bars on south end.
- 69 Doors swing out.
- 70 Remove or guard all set screws on all worm gears; guard end of walk with rail; guard belts and pulleys on hay press; guard all belts and pulleys on all looms; doors swing out.
One-story wood. Guard all belts and pulleys on all looms.
One-story wood (Machine shop). Guard emery wheels.

RACINE.

The following table, covering several pages, shows for each of the 94 factories in Racine, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION — RACINE.

NAME OF ESTABLISHMENT.		LOCATION AND BUSINESS.				BUILDINGS.		EMPLOYEES.			BOILERS.	
				Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.	
1	Adams, E. B., & Co.	Bolster Springs		1	1	8		8		1		
2	Alshuler, Chas., Mfg. Co., The	Overalls and Shirts		1	1	10	165	175	10	1	60	
3	American School Furniture Co.	Furniture		2	2	125		125	14	4	600	
4	Badger Electric Co.	Supplying Light		1		4		4		5	375	
5	Badger Mfg. Co.	Clothing		1		10	65	75		1	30	
6	Baker, L. B., Mfg. Co.	Curry Combs		1		28	2	30	15		elec.	
7	Beebe Mfg. Co.	Bicycles		1		26		26			lad.	
8	Belle City Basket Co.	Baskets		1		16		16	2		hand	
9	Belle City Bolster Spring Co.	Bolster Springs		1		7		7		2	180	
10	Belle City Malleable Iron Co.	Hardware		7		375		375	28			
11	Belle City Mfg. Co.	Agricultural Implements		2		100		100		1	100	
12	Belle City Milling Co.	Flour		1	1	2		2		1	100	
13	Belle City Steam Dye Works	Dye Works		1		2	1	3				
14	Besse & Williams	Laundry		1	1	4	8	12		2	40	
15	Carroll, J. C.	Coal and Wood		1		20		20		2	75	
16	Cas, J. I., Plow Works	Plows		2	5	230		330		3	890	
17	Chas. J. I., Threshing Machine Co.	Threshing Machines		10	4	1,020		1,020	7	3	425	
18	Chalmers, Peter	Foundry		2	1	14	66	80	1	2	200	
19	Chicago Rubber Clothing Co.	Rubber Clothing		2	1	15		15		2	110	
20	Clancy, J. F., & Co.	Coal		1		15		15		1	45	
21	Collier, T. & P.	Mangles and Bicycles		1		15		15		1	60	
22	Common Sense Trunk Co.	Trunks		1		11	1	12	1	1	40	
23	Dickey Mfg. Co.	Fanning Mills		2		50		50		1	60	
24	Driver, Thos., & Sons Mfg. Co.	Sash and Doors		1		40		40		1	100	
25	Fisendroth, B. D., Tanning Co.	Leather		1		95	5	100		2	200	
26	Emerson Linseed Oil Co.	Linseed Oil		1	2	1		1		1	60	
27	Fish Bros. Wagon Co.	Wagons and Buggies		1	5	275		275	8	1	450	
28	Fisher & Schwelger	Laundry		1	1	1	7	8		1	20	
29	Freeman, George B., & Co.	Saddlery Hardware		1		25		25		1	elec.	
30	Freeman, George B., & Co.	Bridle Bits		1		16		16	5	1		

31	Freeman, S. & Sons Mfg. Co., The	Rollers	3	1	210	210	2	305
32	Goshner, Chas., Wire Works	Wire Fencing	1	1	5	6	1	40
33	Gold Medal Furniture Mfg. Co.	Camp and Folding Furniture	1	1	48	12	1	elec.
34	Graham, F. W., Mfg. Co.	Pattens	1	1	12	2	1	Idle
35	Grunher, F. W., Co., The	Fibre Sauerkraut	2	1	10	15	1	gas
36	Guthrie Co., The	Machine Shop	1	1	5	5	1	1
37	Hagman, William L.	Laundry	1	1	4	7	1	1
38	Hartman Trunk Co., The	Trunks	1	1	100	20	1	25
39	Higgins Spring & Axle Co.	Springs and Axles	1	1	102	102	2	250
40	Hilker Wiechers Mfg. Co.	Overalls and Shirts	1	1	1	38	6	elec.
41	Hodges, G. & Son	Machine Shop	1	1	6	6	1	lsd.
42	Holbrook & Armstrong Iron Co.	Machinists	4	1	31	31	1	75
43	Horlick Food Co.	Malted Milk	3	1	74	110	4	300
44	Imperial Bkt & Snap Co.	Bits and Harness Snaps	1	1	15	15	1	gas
45	Johnson, S. C.	Interior Wood Work	1	1	6	6	1	60
46	Johnson & Field Mfg. Co.	Fanning Mills	1	1	15	15	1	35
47	Jones, Earl, Shoe Co.	Shoes	2	2	46	26	4	1
48	Journal Printing Co., The	Printing	1	1	17	5	22	elec.
49	Kambach, Fiebrecht Shoe Co.	Shoes	1	1	26	14	3	60
50	Lakeside Malleable Iron Co.	Castings	2	2	63	63	1	200
51	Lang Mfg. Co.	Hardware	1	1	22	22	1	lsd.
52	Mrs. Printing Co.	Printing	1	1	11	3	1	elec.
53	Metal Stamping Co., The	Dies	1	1	6	6	2	elec.
54	Miller, J., Shoe Co., The	Roots and Shoes	1	1	182	160	45	150
55	Milwaukee Electric Light & Traction Co.	Light and Power	1	1	6	6	2	1,150
56	Milwaukee Electric Light & Traction Co.	Car Barn	1	1	41	41	5	7,050
57	Mitchell & Lewis Co.	Wagons	5	3	325	325	2	500
58	Model Steam Laundry	Laundry	1	1	2	9	1	20
59	National Boiler Works	Boilers	1	1	30	30	1	30
60	Pease, E. H., Mfg. Co.	Fanning Mills	2	2	45	45	1	70
61	Philbrook Shoe Co.	Packs	1	1	24	6	6	100
62	Pierce Engine Co.	Gasoline Engines	3	1	50	50	1	gas
63	Pigging Bros.	Machine Shop	1	1	2	2	1	15
64	Platz, A., Leather Co.	Leather	1	1	50	50	2	160
65	Pugh, W. H.	Coal and Wood	1	1	15	15	1	125
66	Rachne Boat Mfg. Co.	Boats	2	1	49	49	1	250
67	Rachne Brass & Iron Co.	Castings	1	1	9	9	1	gas
68	Rachne Building & Lumber Co.	Sash, Doors and Blinds	1	1	8	8	1	60
69	Rachne Fire Engine Mfg. Co.	Fire Apparatus	1	1	7	7	1	2
70	Rachne Gas Light Co.	Gas Light	1	1	10	10	2	220
71	Rachne General Manufacturing Co.	Wagon Trimmings	1	1	6	2	1	elec.
72	Rachne Hardware Co.	Gasoline and Steam Engines	1	1	30	30	1	lsd.
73	Rachne Hatcher Co.	Incubators	1	1	8	8	1	8
74	Rachne Knitting Co.	Hosiery	1	1	25	100	52	60

FACTORY INSPECTION — RACINE — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.				BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
75 Racine Malleable & Wrought Iron Co.	Castings	5	5	208	...	208	4	2	250
76 Racine Malleable & Wrought Iron Co.	Castings	2	2	49	...	49	...	...	elec.
77 Racine Paper Box Mfg. Co.	Paper Boxes	1	1	1	12	13	5	...	...
78 Racine Paper Goods Co.	Paper Goods .....	...	...	16	21	37	1	...	gas
79 Racine Planing Mill & Mfg. Co.	Sash, Doors and Blinds	1	1	20	...	20	...	1	125
80 Racine Pole & Spring Co.	Bolster Springs, etc.	1	1	5	...	5	...	...	gas
81 Racine Refrigerator Co.	Refrigerators	1	1	20	...	20	...	1	60
82 Racine Refrigerator Co.	Bags and Valises .....	...	...	23	2	25	...	...	...
83 Racine Trunk Co.	Trunks .....	...	...	576	26	602	4	3	300
84 Racine Wagon & Carriage Co.	Wagons and Carriages	4	4	...	...	...	...	...	...
86 Racine Woolen Mills	Woolens	1	1	116	...	116	6	2	160
87 Roberts & Case	Flour and Feed .....	...	...	7	...	7	...	1	60
88 Schoen, George	Clothing	1	1	12	50	62	3	1	50
89 Secor, M. M.	Trunks and Valises .....	...	...	77	77	154	...	2	200
90 Stecher, Dr. Medieine Co.	Patent Medicines .....	...	...	40	184	224	60	...	elec.
91 Treckonbus, E. S.	Sash, Doors and Blinds .....	...	...	16	...	16	...	2	280
92 West Side Steam Laundry	Tank Materials	1	1	5	...	5	...	...	...
93 Winslip Mfg. Co.	Laundry	1	1	3	16	19	...	1	20
94 Wisconsin Wheel Works	Pumps, Wind Mills, etc.	2	2	24	...	24	...	1	60
	Bicycles	2	2	62	1	63	2	2	120
Totals .....	.....	118	57	5,839	1,159	6,948	349	108	10,650

RACINE.

Under this head are found the orders affecting the factories in Racine, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Doors ordered swing out.
2	One additional stairway; discharge two under age.
3	Doors swing out; closets; guard belt and pulley on planer on first floor.
	One-story brick. Guard emery wheels; doors swing out.
	Three-story brick. Put fire escape in good condition; doors swing out; suction device on buffing wheels. Ladder on japaning department.
	One-story brick. Doors swing out.
4	Doors swing out.
5	Guard placed on elevator on second floor; door swing out; seven children under age discharged; affidavits.
6	Doors swing out; guard put on elevator on first floor; discharged one child under age.
7	Discharged four children under age; suction device.
8	Doors swing out.
10	One-story brick. Guards and suction device on emery wheels.
	One-story brick (blacksmith). Doors swing out.
	One-story brick (foundry). Suction device for sixteen iron tumbling mills; cover gears to sixteen tumbling mills; order fan for tumbling room.
	One-story brick (moulding room). Set screws guarded on shafting.
	One-story frame. Guard pulley and set screw to ferrule machine; guard set screws on shafting; guard emery wheel and cut off saw, wood department; guard gearing to No. 2 Bulldozer; guard and provide suction device for four emery wheels in northwest corner of annealing room; suction device for thirteen tumbling mills; gearing to large tumbling mill; cover gear to line shaft overhead; 48-inch pulley in place of the 32-inch on blower in annealing room for ventilation, also fans for purifying air in blacksmith shop; rulling on walk; discharged eight children under age.
11	Guard set screws in shafting on second floor that runs emery wheel; doors swing out.
	One-story brick. Doors swing out.
12	Doors swing out.
13	Doors swing out.
14	Doors swing out.
16	Four-story brick. Guard hand saw on bottom, wood pattern shop; guard emery wheels; door swing out.
	One-story brick. Doors swing out.
	Two-story wood. Doors swing out.
	Four-story brick. Guard in running gear on square shear, also set screws on same on second floor; also guard in running gear on roller; also set screws on shafting on second floor; guard emery wheels; doors swing out; platform on fire escapes to be extended to width of two windows and railing around same; iron shutters on all windows, also doors; stairway from fourth floor to roof; repair stairway from third to fourth floor.
	One-story brick. Guard pulley on shear in annex to blacksmith shop; doors swing out; guard iron cog wheel on shear in annex to blacksmith shop; guard fly wheel on punch machine, same room; guard cog wheel on No. 14 Williams, White & Co. punch machine; guard large cog wheel on cutting machine, same room.
	Four-story brick. Guard gears on tapping machine; guard gear on bolt cutter; doors swing out; erect fire escape.
	Four-story brick (wood shop). Guard in running gear on double ripper on second floor; pulley on south side of same; guard belts and pulleys on shaper on first floor; guard all set screws on shafting on first floor; doors swing out.
	One-story wood. Doors swing out.

- Two-story wood. Guard band saw on second floor.
 One-story brick. Guard all set screws on all shafting; doors swing out.
 Two-story brick. Guard all set screws on shafting; guard in running gear on tube roller; guard all set screws on shafting on second floor in tool room; guards on emery wheels; doors swing out.
 One-story wood. Guard all running gear on all tumbling machines; guard all set screws on shafting; suction device applied to emery wheels; reu-
- 17 Suction device for thirty-three wheels; hoods over nineteen blacksmith forges and sixteen coal furnaces; balance wheels, gear and key to three punching machines; set screws on all shafting, drill press and four heading machines; pulleys and gear to heading machines, lower wheel to band saw and gear to planer.
 Three-story brick. Doors swing out; suction device on six wheels; ladder from third floor to roof; new steps from third to second floor; guard all set screws on shafting.
 One-story brick. Suction for six emery wheels.
 One-story brick (blacksmith, 1). Doors swing out.
 One-story brick (blacksmith, 2). Suction device for three emery wheels.
 Three-story brick. Set screws on shafting; lower wheel to band saw; also gear to planer.
- 19 Three-story brick. Set screws; guards on all shafting.
 One-story brick. Communications from work rooms to factory; guard all set screws on shafting, box driving pulley in north end of churn room; guard pulley and main belt; also gears to rubber calendars; extend guard over key to large gear to five rollers; guard main shaft on south side of second story building.
- 21 Doors swing out.
 22 Guard band saw on bottom, first floor; doors swing out.
 23 Doors swing out.
 24 Guard emery wheels; doors swing out.
 25 Guard set screws on third floor; doors swing out; fire escape.
 26 Doors swing out.
 27 Doors swing out.
 Three-story brick (blacksmith and iron department). Repair fire escape; repair stairway from second to third floor; also floor in southeast corner or guarded with rail.
 Three-story brick (blacksmith and wood department). Two fire escapes on east side; standpipes; guard in running gear on axle lathe; guard set screws on all shafting.
- 28 Doors swing out.
 29 Doors swing out.
 30 Affidavits; doors swing out.
 31 Guard set screws on shafting on first floor; doors swing out; lift gate on west side of one-story brick and engine room on south.
 32 Doors swing out.
 33 Doors swing out.
 34 Two-and-one-half story wood. Guards around elevator on two upper floors.
 35 Doors swing out.
 36 Affidavits; doors swing out.
 37 Affidavits; doors swing out.
 38 Doors swing out; guard lower wheel of band saw; connections from engine room; guard elevator from second to third floor; guard gear and belt to planer; gear to varnishing machine; set screws on all shafting; box belt and cover gear and key to glue machine; discharged five boys under age.
- 39 Doors swing out.
 One-story wood. Guard emery wheels.
 40 Rail on west side on top of stairway; doors swing out; remove bicycles from hallway; iron fire escape.
 41 Doors swing out.
 42 Affidavits; doors swing out; closet pipes repaired.
 Two-story brick and wood. Guard in running gear on planer, second floor; guard band saw on bottom, second floor; suction device put on emery wheels and tumbling machines.
 Two-story brick veneered. Guard set screws on shafting.
- 43 Doors swing out.
 44 Doors swing out.
 45 Doors swing out.
 46 Affidavits; guard belts and pulleys on circular saw, also all set screws in running gear on sander and on planer; doors swing out; repair runway, also floor in warehouse and first floor in factory; have wood removed around machinery and emery wheels.
- 47 Affidavits; doors swing out; build iron stairway from second story roof to one-story brick building below.
 48 Affidavits; new steps put in rear to basement; doors swing out.
 49 Affidavits; guard fly wheel in basement in engine room, also pulley and belt in basement; doors swing out.
 50 Affidavits; doors swing out.
 51 Doors swing out; set screws on setting on first and second floors; new floor on south side to front doorway.
 52 Affidavits; doors swing out; closet for female help.
 53 Affidavits; doors swing out.
 54 Doors swing out; guard arm of engine; set screws on shafting; ventilator in engine room; discharged six children under age; affidavits.
 55 Doors swing out.

- 57 Discharge one child under 14 years; guard emery wheels; repair closets, ventilation, flushing, etc.
Three-story brick. Guard set screws on shafting; have both shapers hooded and connected to fan in room 0-1; guard emery wheels; ventilate closets; box cog wheels in room No. 1-3, also set screw on shafting near cog wheel; repair pulley, room 0-1; doors swing out.
Four-story brick. Guard emery wheels; ventilate closets.
One-story brick. Guard set screws on shafting; have emery wheels hooded and suction device put on; suction device in wood shop.
- 58 Guard set screws on shafting in basement and second floor; doors swing out; guard elevator on second floor with wire lift gates with weights.
- 59 Doors swing out.
- 60 Doors swing out; guard lower end of band saw, also belts and gears to planer, right hand side facing machine.
Three-story brick. Guard belt tightener on belt of engine in engine room; connection from engine room to factory; set screws on shafting; new emery wheels on stand in southwest corner of shop; set screws on shafting in machine shop; set screw on shafting in blacksmith shop.
- 61 Doors swing out; discharge two boys under 14; set screws on shafting, balance wheel and belt to dye machine, and fly wheel guarded.
- 62 Two-story wood. Guard set screws on shafting on both floors:
Guard set screws on all shafting; doors swing out.
One-story wood. Guard fly wheel on motor on south and west sides; guard band saw on bottom.
- 63 Doors swing out.
- 64 Guard all set screws on shafting in basement; doors swing out; two fire escapes and standpipes.
- 66 Affidavits; guard set screws on shafting on first floor; doors swing out.
One-story wood. Guard set screws on shafting.
- 67 Doors swing out.
- 68 Doors swing out; guide on rip saw; set screws on all shafting, lower end of band saw; belt and pulley to planer; gear to planer; belt and pulley to moulding machine; suction device on planer, moulder and tenon machines; ventilation in engine room.
- 69 Set screws on shafting on second floor.
- 70 Doors swing out.
- 71 Doors swing out.
- 72 Guard band saw on second floor; doors swing out; one fire escape and standpipe.
- 73 Doors swing out.
- 74 Doors swing out; set screws on all three floors.
- 75 Doors swing out.
- 76 Doors swing out.
- 77 Doors swing out.
- 78 Affidavits; doors swing out.
- 79 Guard band saw on second floor; guard all set screws on shafting on first floor; guard emery wheels; doors swing out.
- 80 Guard fly wheel on gasoline engine; guard set screws on shafting; doors swing out.
- 81 Doors swing out; guard fly wheel, also suction device on sander, planer, shaper and stecker and tenon machines on first floor; guard lower end of band saw; connection from engine room to factory.
- 82 Erect ladder from roof to shed below, also repair ladder from main roof to roof below.
- 83 Affidavits; guard set screws in planing room on shafting, also set screws on shafting in basement; doors swing out; fire escape and standpipe.
- 84 Guard belts and pulleys on planer, both sides, room No. 3, also guard both steckers in machine, room No. 3; guard belts and pulleys on both sanders, room No. 10; guard emery wheels; doors swing out.
Four-story brick (blacksmith department and shipping room). Have suction device put in. Have hood put on following machines: Tenoning and mitre machines, also on rim planer in wheel department.
Four-story brick (carriage mfg.). Doors swing out.
Four-story brick (paint and blacksmith shop). Guard emery wheels.
One-story wood. Guard in running gear on rip saw in saw shed; iron fire escape.
- 85 Affidavits; doors swing out; place fire escape center of building.
- 86 Guard main driving belt and pulley on main line shaft on west side on first floor.
- 87 Guard fly wheel in engine room; set screws on shafting; place bar in doorway on second floor.
- 88 Doors swing out.
- 89 Guard set screws on shafting in basement; one iron fire escape and standpipe.
- 90 Doors swing out; guard emery wheels; stairway from third floor to roof of warehouse; new steps from first to second, also from second to third floors.
- 91 Doors swing out.
- 92 Doors swing out.
- 93 Doors swing out; guard set screws on first floor, on shafting; guard belt and pulley on planer in basement.

RHINELANDER.

The following table, covering several pages, shows for each of the 14 factories in Rhineland, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION - RHINELANDER.

NAME OF ESTABLISHMENT.		BUILDINGS.		EMPLOYEES.			BOILERS.		
		Under three stories in height.	3 or more height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
1	Brown Bros.	Lumber	2	156	1	157	9	700	
2	Brown, Robbins Lumber Co., The	Lumber	2	106		106	5	250	
3	Brown & Robbins	Planing Lumber	1	11		11	1	60	
4	City Electric Plant	Electric Light	1	5		5	3	325	
5	City Pumping Station	Water Supply	1	2		2	2	200	
6	Couro, Abner & Son	Lumber	1	12		12	2	100	
7	Herald Publishing Co.	Printing	1	2	1	3	1	80	
8	Misson, Bronson & French Co.	Lumber	1	36		36	1	80	
9	Model Steam Laundry	Laundry	1	4	4	8	1	8	
10	Rhineland Brewing Co.	Brewery	1	2	6	6	1	50	
11	Rhineland Iron Co., The	Machine Shop	1	3	9	9	1	40	
12	Rhineland Printing Co.	Printing	1	28	2	30	1	100	
13	Soo Planing Mill Co.	Planing Lumber	1	100		100	5	175	
14	Stevens Lumber Co.	Lumber	1	114	2	116	6	300	
15	Wabash Screen Door Co.	Doors and Windows	6	5		11	2	300	
Totals		24	7	591	10	601	34	2,388	

RHINELANDER.

Under this head are found the orders affecting the factories in Rhinelander, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
4	Swing doors out; place railing around main drive wheel on engine and pulleys running dynamo.
7	Swing doors out.
8	Swing doors out.
9	Swing doors out.
11	Swing doors out.
14	Place railing or doors at each and every opening through floors where elevators run.
	Three-story brick (warehouse). Guard elevator well.

SHEBOYGAN.

The following table, covering several pages, shows for each of the 54 factories in Sheboygan, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION - SHEBOYGAN.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Number.	Under 16 years.	Number.
1 Ackermann, Robert	Coal and Wood	1	1	5	.....	5	.....	5
2 Aladdin Soap Co.	Soap Manufacturers .....	.....	.....	7	.....	7	.....	1
3 American Molding Bed Co.	Folding Beds .....	.....	.....	63	.....	63	.....	1
4 American Paper Co.	Chairs .....	.....	.....	105	.....	165	20	2
5 Baker, John	Wagons .....	.....	.....	17	.....	17	1	1
6 Big Hit Steam Laundry	Laundry .....	.....	.....	3	.....	11	.....	1
7 Columbia Shoe Co.	Hats and Shoes .....	.....	.....	16	.....	23	.....	1
8 Crocker Chair Co., Plant A	Chairs .....	.....	.....	850	45	335	42	8
9 Crocker Chair Co., Plant B	Chairs .....	.....	.....	335	45	440	42	15
10 Demokrat Printing Co.	Publishers	2	2	14	.....	14	2	.....
11 Dillingham Mfg. Co.	Refrigerators .....	.....	.....	175	.....	175	25	3
12 Excelsior Laundry Co.	Laundry .....	.....	.....	2	.....	6	.....	3
13 Excelsior Wrappers	Excelsior Wrappers .....	.....	.....	20	4	20	.....	1
14 Frost Veneer Seating Co.	Veneer Seating .....	.....	.....	173	.....	181	2	1
15 Frost Veneer Seating Co.	Veneer Seating .....	.....	.....	35	7	35	.....	2
16 Fryburg, C. B., Lumber Co.	Planing Mill .....	.....	.....	1	.....	9	.....	1
17 Garcon Toy Co.	Toys .....	.....	.....	250	.....	250	10	2
18 Gusch Brewing Co., The	Brewers .....	.....	.....	31	.....	31	.....	2
19 Hall & Ross	Glove Manufacturers .....	.....	.....	1	.....	38	.....	1
20 Howe, L. K.	Publishers .....	.....	.....	5	5	10	1	.....
21 Illinois Leather Co.	Plastering Hair .....	.....	.....	4	.....	4	.....	1
22 Jenkins Machine Co.	Machinery .....	.....	.....	40	.....	40	.....	1
23 Jung, J. & W.	Wagons and Sleighs .....	.....	.....	43	.....	43	2	.....
24 Kohler, Hensen & Stehn Co.	Enameled Ware .....	.....	.....	115	.....	115	.....	1
25 Landreth A. Seed Co.	Canning Factory .....	.....	.....	80	40	120	.....	2
26 Martoon Mfg. Co.	Furniture .....	.....	.....	600	.....	600	25	8
27 Meyer, Phil Co.	Machine Shop and Foundry .....	.....	.....	25	25	25	.....	.....
28 Mueller, H. G. Lumber & Mfg. Co.	Woodenware .....	.....	.....	22	.....	22	.....	1
29 Musical Instrument Mfg. Co.	Musical Instruments .....	.....	.....	6	.....	6	.....	1
30 Novelty Mfg. Co.	Book Cases and Cabinets .....	.....	.....	70	.....	70	.....	.....

BOILERS.

EMPLOYES.

BUILDINGS.

NAME OF ESTABLISHMENT.

LOCATION AND BUSINESS.

Total horse power.

Under 16 years.

Under three stories in height.

3 or more stories in height.

Males.

Females.

Number.

Under 16 years.

Number.

FACTORY INSPECTION — SHEBOYGAN — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYEES.		BOILERS.			
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
31 Oplenberg & Sonnemann	Rollers and Engines	1	1	15	15	15	15	1	25
32 Phoenix Chair Co.	Chairs	4	3	510	20	530	110	3	385
33 Rebsel, C. Coal Co., The	Coal, Wood, Salt	4	1	147	1	147	1	2	150
34 Roentz Leather Co.	Mfg. Leather	3	2	278	1	279	4	4	680
35 Schmidt, R. H. & Co.	Bee-Keepers Supplies	1	1	45	6	51	16	1	16
36 Schrier Konrad Co.	Brewers	1	5	45	1	46	1	2	300
37 Sheboygan Brick & Tile Co.	Brick	1	1	332	32	364	40	1	550
38 Sheboygan Chair Co.	Chairs	1	2	61	1	62	14	1	70
39 Sheboygan Cigar Mold Co.	Cigar Moulds	1	1	9	1	10	1	1	150
40 Sheboygan Coal Co.	Coal and Wood	1	1	16	4	20	4	2	200
41 Sheboygan Daily Journal	Printers	1	1	35	1	36	1	3	350
42 Sheboygan Knitting Co.	Knit Goods	1	1	17	17	34	1	1	40
43 Sheboygan Light, Power & Ry Co.	Light and Power	2	1	7	10	17	1	1	8
44 Sheboygan Mineral Water Co.	Bottlers of Mineral Water	1	1	7	6	13	1	1	45
45 Sheboygan Steam Laundry	Laundry	1	1	7	3	10	1	1	80
46 Sheboygan Telegram, The	Printers	1	1	1	1	2	1	2	100
47 Sheboygan Volksblatt	Printers	2	2	69	30	99	14	1	60
48 Spratt, Geo., & Co.	Chairs	6	1	145	30	175	3	1	900
49 Volbrath, J. J. Mfg. Co.	Foundry	1	1	58	1	59	1	1	45
50 Winter, M., Lumber Co.	Interior Woodwork	1	1	22	1	23	1	1	60
51 Zumbali, A., & Son	Brick	1	1	4	1	5	1	1	900
52 Zimmerman, E. F. W.	Rindery	3	1	115	1	116	1	1	45
53 Zacheische, Theo., & Son Co.	Turners and Carriers	1	1	14	1	15	1	1	45
54 Zurhede, Fred & Co.	Brick	1	1	14	1	15	1	1	45
Totals		62	46	4,701	308	5,009	466	81	7,889

SHEBOYGAN.

Under this head are found the orders affecting the factories in Sheboygan, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
2	Guard gear to soap mixer; swing door out.
3	Affidavits; guard fly wheel in engine room; guard all pulleys and belts on first floor, also set screws; fire escape on north side of building; provide communications between work room and engineer; swing doors out; new step on stairway on the east; repair gate to elevator on third floor; oil cables to elevator.
	Three-story wood. Guard elevator well on first floor, on the north and south, and lift bar on west side; place lift gate on second floor on west side of elevator.
4	Affidavits; guard band saw on first floor; order set screws in sanding room covered; cover belts and pulleys on shaper; guard boring machine on second floor; guard set screws on first floor; guard outside pulleys and belts to large planer; swing doors out; three fire escapes.
	Three-story wood. New outside steps from second story.
5	Affidavits; communications from work room to engineer; swing doors out; guard lower wheel of band saw, also belt and pulley to shaper; guard gearing to planer; place extra guard on planer; clean back of machine on first floor; cover wood polisher gears, second floor; repair railing on bridge.
6	Swing doors out.
7	Swing doors out.
8	Remove or guard all set screws on shafting and collars; swing doors out; file affidavits.
9	Swing doors out.
	Four-story brick. Guard all set screws on shafting, also belts and pulleys to sanding machine; guard set screws, building No. 4, and in building No. 5; railing on landing to fire escape, building No. 1; iron fire escape and standpipe on south of building No. 5; discharged one boy under age; two fire escapes and two standpipes, one each, on buildings 4 and 5.
10	Affidavits.
11	Affidavits; swing doors out; guard set screws on shaft, also belt and pulley in shed; pulley and key to cut machine; pulley and belt to tumbling machine in shed; set screws on shafting on second floor; wheel to band saw; gear to sanding machine; set screw on collar to boring machine; pulley and belt to shaper; iron fire escape on main building; bars to well to elevator on first floor.
12	Swing doors out; door on water closet; guard set screws.
13	Guard set screws on shafting.
14	Affidavits; guard belt to sanding machine No. 794; guard belts from main shaft to countershaft; belts to veneer rollers; gearing to veneer machine; set screws covered on second floor; wheel to No. 31 band saw; guard shafting to sanding machine; provide suction device for six sanders; box belting to machine 37 and 38; loose pulley to No. 50 band saw; fire escape on north side of building; set screws on first floor; bar on outside of elevator well; unlock main entrance door.
	Three-story wood. Guard pulleys to shaper, second floor; pulleys on sanding machine, second floor; pulleys and belts on glue rolls, also set screws; doors swing out.
	Three-story wood (paint shop). Guard all set screws on first floor; ordered goods removed from door to stairway on second and third floor.
	One-story wood. Guard all set screws on shafting.
15	Guard set screws on shafting on second floor; swing doors out; guard fly wheel on north side; set screws and pulleys to belt tightener; ventilation in boiler room; set screws on first floor; connection from engine room to factory; repair stairway from first floor to second; fire escape on east side of building.

- 16 Guard belt and pulleys on planer; wheel to band saw; guard set screws on grindstone shafting, also set screws on first floor; guard belt pulley on band saw.
- 17 Cover set screws on third floor; guard bent to sander on second floor; main driving belts on second floor guarded; guard Belton blower on second floor; guard No. 5879 planer; guard belt and pulleys No. 2 Fischer's band saw; guard pulleys and side pulleys on Collady sticker; guard gearing to No. 4 planer; guard fire escapes; communication from work room to engineeer; guard fly wheels in engine room and rope transmission on west side; improve condition of closet on second floor; bar on first floor elevator; affidavits.
- Three-story wood. Affidavits; swing doors out.
- 19 Affidavits; new step outside to cellar; transom in front of buildings as means of ventilation; guard set screws to shafting; swing doors out.
- 20 Swing doors out; cover all set screws.
- 21 Swing doors out; guard fly wheel and belt in engine room; set screws on shafting; guard in running gear to Washer; guard set screw on shafting in hair house.
- 22 Swing doors out; guard set screws on shafting in basement, also on first floor; guard set screws on shafting in engine room.
- 23 Affidavits; swing doors out.
- 24 Swing doors out; guard belt and pulleys to compressed air pump, also key; guard all set screws in machine shop; guard lower band saw wheel; guard cut off saw in shed northwest corner of wood shop.
- One-story wood (acid room). Guard set screws in shafting, also in grinding machine.
- One-story wood. Guard set screws in grinding room.
- 25 Guard fly wheel on east end; guard set screws on first floor; swing door out.
- 26 Guard three sanders, belts and pulleys; guard in running gear to No. 624 sander; guard bead jointers, second floor; guard fly wheel in north side, engine room.
- Four-story wood. Affidavits; set screws on shafting, third floor, guarded; two fire escapes.
- 27 Suction device for both emery wheels; guard set screws on shafting.
- 28 Guard set screws in engine room; swing doors out; place suction device and guard wheels and wheel to band saw; guard set screw and pulley to shaper; guard set screw and pulley to planer.
- 29 Swing doors out.
- 30 Swing doors out; new landings for fire escapes.
- Four-story ironclad. Enlarge landing of fire escapes.
- 31 Swing doors out; guard set screws on shafting.
- 32 Affidavits.
- Three-story brick. Iron ladders on north side of building from platform.
- Four-story brick. Fire escape on west side of building.
- 33 Rail to north end line shaft; rail on walk to blocks leading to northeast corner of building for hoists; railing to north end of six friction drums; key to conveyor on roof; rail on southwest corner of roof; box gearing to screening conveyor on fifth; railing around hopper hatches on outside hoist on roof; lever wrench for outside hoist on second floor or unscrew them when not in use; box cable pulley on fourth floor to screening elevator; set screw to idler on second floor, one extra plank, also add railing on walk to elevator; box pulley on inside scraper drum and all set screws on shafting; see that all ladders on mast are in good condition; guard pulley to No. 222 engine; railing on both sides of walk to main shaft; platform for oiler on hoist drum east end, also heads of bolts cut off; add more light on runway east side on No. 2 building or No. 2 coal dump; railing on north side of runway on third floor; railing on northeast corner of building on third floor; railing on south side of flow on second floor; set screws on main shaft; pulley boxed to 4 hoist on second floor; proper fire protection.
- One-story wood. New stairway to attic with rail, also walk and railing on north side of wood conveyor in attic; guard fly wheel; extra plank to oiler's walk in engine room; new platform to heater in engine room; new oiler's walk with railing in saw shed; set screws to shafting on both machines; guard single wood saw.
- Three-story wood. Box drums and pulleys, set screws on main shafting on north side; walk around outside drums; rail to oiler's walk on the northeast corner on inside; box belt and pulleys end of shafting on northeast end of building, second floor; new step on outside of stairway on east side of building; box pulley and set screw, also guard on east end of shaft to out running gear second floor.
- 24 Affidavits; guard set screws on shafting to glassing jack on fourth floor; guard belt screws on jacks on second floor; guard set screws on first floor; swing doors out; bars inside of elevator doors on all floors; fire escape.
- Four-story wood. Fire escape; set screws on third floor guarded, also on collars of jacks; guard all set screws on second floor, also on jacks; swing doors out.
- Two-story wood. Guard out running gear on shafting and all set screws.
- One-story wood. Railing on outside of oiler's walk; guard elevator well; guard pulley and fly wheel to engine in bark shed.
- 35 Communication between work room and engineer.
- 36 Swing doors out.

- 37 Guard fly wheel and main belt.
- 38 Guard set screws on shafting; swing doors out; file affidavits.
- 39 Affidavits; guard fly wheel in engine room; guard all set screws in shafting on first floor; place guard on emery wheel, first floor; guard emery wheels on second floor; guard set screws on second floor; swing doors out; communications between work room and engineer; place guard around elevator on first floor and lift bars on east and west sides; also on second floor same as first.
- 40 Railing on three hoisting platforms; also railing on east of two hoisting platforms; add extra plank and railing to oiler's walk.
- 41 Swing doors out; new steps on side stairway.
- 42 Affidavits; guard end and sides of fly wheels; guard set screws in dye room; guard set screws; guard set screws in carding room; guard set screws on second floor.
- 43 Guard belts and pulleys on east side No. 1 and 2 arc machine; 3 and 4 alternating machine; No. 5 arc machine; No. 1 stationary power machine; guard north side from cut off coupling to door leading to factory; swing doors out.
- 44 Guard set screws on second floor; swing doors out.
- 45 Affidavits; swing doors out.
- 46 Swing doors out.
- 47 Swing doors out.
- 48 Affidavits; railing on left hand side 38 feet and runway to be repaired. Two-story wood. Wooden guard placed in front of shaper; hood for cut off and rip saw; suction device for sander; guard set screws, also set screws on shafting on first floor; guard pulleys and belt to No. 3128 planer; guard fly wheel; communications between work room and engineer; bar placed on second floor in front of hoist; railing on bridge, and repair bridge.
- 49 Guard piston rods; new steps and railing on warehouse 80x150 south of enamelling room. One-story wood. Put in fan. Two-story brick. Guard No. 4 press; swing doors out; more light from picking room to enamelling room. One-story brick. Ventilation for gas room. One-story wood (grinding and cleaning room). Guard all set screws on shafting, shafting to grinding machines; guard emery wheels; put in fan; ventilator in closet; suction device to fan. Two-story brick. Cover set screws to crushers; guard gearing to mill and key to gearing to crusher on both sides; cover set screws on 4-foot mill and gearing to same; cover gearing on 4-foot stone mill; guard pulleys and balance wheel on stone crusher.
- 51 Guard set screws to shafting; belt and pulleys to brick machine; guard fly wheel and belt; guard platform with railing; guard pulley to puddler; guard large gearing to brick machine.
- 52 Swing doors out.
- 53 Affidavits; ordered set screws on transmission pulley guarded; guard all set screws on shafting on first floor; extra plank on oiler's walk to bark conveyor. One-story brick. Guard all set screws in beam house; swing doors out. Two-story wood. Guard in running gear on both bark mills, also set screws on same; set screws on bark conveyor covered.
- 54 Box gear to brick machine on northeast side, also fly wheel and pulley; box large gear to pug mill; guard main belt to pug machine; repair bottom of brick machine; affidavits; guard belts to planer.

STEVENS POINT.

The following table, covering several pages, shows for each of the 24 factories in Stevens Point, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION—STEVENS POINT.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYEES.			BOILERS.			
		Under three stories in height	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.		
									Total horse power.	
1	Bennett, Daniel	Bakery	1	1	2	33	35	1	1	5
2	Blake, H. S., & Co.	Hosiery	1	1	2	9	11	1	1	50
3	Central City Iron Wks.	Machinery	4	1	3	3	6	1	1	100
4	Gazette, The	Printing	1	1	4	1	5	1	1	gas
5	Hoeffler Mfg. Co.	Agricultural Implements	1	1	1	1	2	1	1	100
6	Holler, Fred	Interior Wood Work	1	1	26	12	38	1	1	12
7	Mitchell, W. W.	Lumber	2	1	18	12	30	2	1	165
8	North Star Mill	Milling	1	1	13	16	29	3	1	water
9	Paffner & Rounds	Milling	1	1	30	100	130	5	1	90
10	Plover Paper Co.	Paper	3	1	27	27	54	1	1	35
11	Rice, John & Bros.	Machinery	1	1	6	3	9	1	1	gas
12	Rolink Polish Weekly	Printing	1	1	15	15	30	1	1	90
13	South Side Lumber Co.	Lumber	1	1	25	25	50	1	1	100
14	Stevens Point Box Co.	Boxes	1	1	4	1	5	1	1	80
15	Stevens Point Brewery	Brewery	1	1	6	1	7	1	1	gas
16	Stevens Point Journal	Printing	1	1	10	10	20	2	1	240
17	Stevens Point Lighting Co.	Gas and Electric Light	3	1	3	3	6	2	1	160
18	Stevens Point Water Co.	Supply Water	1	1	11	11	22	1	1	100
19	Textile Starch Co., The	Starch	3	1	17	17	34	1	1	80
20	Vetter Mfg. Co.	Sash, Doors, etc.	2	1	35	35	70	2	1	160
21	Weeks, John, Lumber Co.	Lumber	1	1	8	20	28	1	1	40
22	Wis. Best Steam Laundry	Laundry	5	1	275	275	550	1	1	460
23	Wisconsin Central Ry Shops	Repairing	2	1	125	10	135	1	1	4
24	Wisconsin River Paper & Pulp Co.	Paper and Pulp	38	3	733	170	903	11	1	32
Totals .....		.....	38	3	733	170	903	11	1	2,957

STEVENS POINT.

Under this head are found the orders affecting the factories in Stevens Point, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out.
3	Swing doors out.
4	Swing doors out.
5	Swing doors out.
6	Rail around engine; swing doors out.
7	Affidavits; swing doors out.
8	Swing doors out; railing on stairs.
10	Railing on stairs; better ventilation in rag room; affidavits.
11	Swing door out; rail around fan wheel.
12	Swing doors out.
14	Affidavits.
15	Swing door out; keep floors and walls cleaner.
16	Swing doors out.
17	Swing doors out.
18	Swing doors out.
19	Railing on stairs; iron rail around engine.
21	Railing on stairway leading from ground floor to filling room.
22	Swing doors out.
24	Affidavits; swing doors out; guard all exposed shafting, gears and set screws.
	Affidavits on record; gearing shaft from water wheel to grinder guarded.
	Swing doors out.

SUPERIOR.

The following table, covering several pages, shows for each of the 51 factories in Superior, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION - SUPERIOR.

FACTORY INSPECTION.

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NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.		
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
1 Anchor Mill	Flour Mill	1	1	70	70	1	70	2	500
2 Lake Superior Mill	Flour Mill	1	1	23	23	1	23	5	1,400
3 Lisman Mill	Flour Mill	1	1	70	70	1	70	4	700
4 Duplex Mfg. Co.	Wind Mills, Pumps, etc.	1	3	86	86	1	86	2	123
5 Webster Mfg. Co.	Chairs	1	3	237	30	267	10	4	400
6 Adamant Mfg. Co.	Plaster	1	1	10	10	1	10	1	20
7 American Barrel Co., The	Barrels	1	4	56	56	1	56	1	35
8 Barker, C. S.	Dredging Contractor	3	3	135	30	165	1	3	70
9 Broadway Laundry	Laundry	1	1	10	10	40	2	2	150
10 Chicago, St. Paul, Minneapolis & O. R. R.	Repair Shop	1	1	13	13	13	2	1	100
11 Commander Flour Mill, The	Flour Mill	1	1	22	22	22	1	1	15
12 Cowdin, H. F.	Building Contractor	1	1	35	35	35	1	1	60
13 Cowie Bros.	Sash, Doors, etc.	1	1	5	5	6	1	1	35
14 Enterprise Laundry	Laundry	1	1	2	11	13	1	1	etc.
15 Evening Telegram Co.	Publishing, etc.	1	1	20	20	20	4	4	750
16 Freeman Mill	Flour Mill	1	1	70	70	70	2	2	300
17 Great Northern Bottling Co.	Bottling Works	1	1	2	2	2	3	3	140
18 Great Northern R. R. Shops	Railway Repair Shops	3	3	276	276	5	2	2	150
19 Hall Elevator Co.	Cleaning Grain	1	1	5	5	5	2	2	140
20 Holmes, A. E., & Bros.' Co.	Sheet Metal Work	1	1	16	16	16	2	2	150
21 Klinkert Brewing Co.	Beer and Malt	1	1	9	9	9	1	1	60
22 Lake Superior Bag Co., The	Bags	1	1	14	1	15	3	3	600
23 Lehigh Coal & Coke Co.	Handling Coal	3	8	190	190	190	1	1	75
24 Malleable Post & Iron Co., The	Foundry	1	1	22	22	22	1	1	180
25 Mankato Flour Mill	Flour	1	1	2	2	2	4	4	300
26 McCord Lumber Co.	Lumber, Lath, etc.	1	1	250	250	250	2	2	40
27 Northern Brewing Co., The	Beer	1	1	24	1	25	2	2	75
28 Ohio Coal Co.	Coal	1	1	75	75	75	1	1	35
29 Penn., Wm., & Co.	Cut Stone	1	1	22	22	22	1	1	35

FACTORY INSPECTION — SUPERIOR—Continued.

	NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYEES.			BOILERS.			
			Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.	
30	Peyton, Kimball & Barber	Lumber, Lath, etc.	2		150		150		3	7	600
31	Philadelphia & Reading Coal & Iron Co.	Coal and Iron	5		210		210			2	100
32	Power House, West Superior Hotel	Power for Opera and Hotel	1		5		5			3	300
33	Roberts, G. W.	Roofing	1		5		5				
34	Smith, Alward & Co.	Warehouse	1		8		8				elec.
35	Strothman Iron Co.	Machinery	1		35	1	36			1	50
36	Superior Co-Operative Barrel Co.	Barrels	1		38		38			1	50
37	Superior Iron Works	Machinery	1		18		18				gas
38	Superior Laundry	Laundry	1		5	21	26			1	23
39	Superior Leader	Publishing, etc.	1	1	45	2	47				elec.
40	Superior Rapid Transit Co.	Electric Railroad	1		75		75			3	500
41	Superior Ship Building Co.	Ship Building	5		225		225		2	8	645
42	Superior Water & Light Co.	Gas and Light for City	1		43		43			1	40
43	Superior Water, Light & Power Co.	Electric Light for City	1		8		8			4	700
44	Superior Wave	Publishing, etc.	1		5	1	6		1		gas
45	U. S. Iron & Foundry Co.	Foundry	1		41		41			1	250
46	Warneka, Joe	Trunks	1		1		1				
47	Warehouse & Builders Supply Co.	Lime, etc.	5		73	5	78		6	2	50
48	West Superior Bedding Co.	Mattresses	1		24	8	32		3	1	35
49	West Superior Brewing Co.	Beer	1		6		6			1	35
50	West Superior Lumber Co.	Lumber	1	1	175		175			2	95
51	Whitney Bros.	General Contractors	1		70		70				
Totals			60	15	2,507	107	2,614	34	90	9,788	

SUPERIOR.

Under this head are found the orders affecting the factories in Superior, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out.
2	Swing doors out.
5	Affidavits sworn to; swing door out.
9	Swing doors out.
11	Swing doors out.
12	Swing doors out; railing on outside stairway.
14	Swing doors out.
15	Swing doors out.
19	Swing doors out.
20	Swing doors out.
21	Swing doors out; hood on belt on second floor.
22	Swing doors out.
24	Swing doors out; railing on stairway.
25	Swing doors out.
28	Swing door out; affidavits.
31	Swing doors out.
32	Swing doors out.
36	Procure affidavits and permits; boy discharged.
37	Swing doors out.
38	Swing doors out.
39	Swing doors out.
40	Swing doors out.
41	Swing doors out.
42	Swing doors out.
43	Swing doors out.
44	Swing doors out.
46	Swing doors out.
47	Procure new affidavits; discharge two children under 14 years; swing doors out.
48	Swing doors out; protect belts running from first to second floor.
49	Swing doors out.
50	Swing doors out.

WATERTOWN.

The following table, covering several pages, shows for each of the 27 factories in Watertown, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power," the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION - WATERTOWN.

FACTORY INSPECTION.

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NAME OF ESTABLISHMENT.		LOCATION AND BUSINESS.		BUILDINGS.		EMPLOYES.			BOILERS.		
				Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
1	American Maltng Co.		Malt	1	2	26		26		1	300
2	Badger State Bottling Co.		Beverages	1	1	6		6		1	8
3	Biedfeld, Otto & Co.		Machine Shop	1	1	10		10		1	32
4	Brandt, Edw J. Dent Co.		Gas fixtures		2	60		60		1	226
5	City Water Works		Supply Water		1	2		2		2	160
6	Cordis, L. H., & Co.		Brick	1		33		33		3	Idle
7	Cordis, Vaughn & Co.		Brick	1		18		18		1	25
8	Eagle Mill		Flour and Feed	1	1	6		6		1	80
9	Farnbrook, James		Shipping Crates	1	1	10		10		1	40
10	Globe Milling Co.		Flour		1	13		13		2	160
11	Hartig, Wm.		Brewer		3	30		30		2	100
12	Henry, I. L. Co.		Paper Boxes	1			33	33	3		
13	Kunert, E. Mfg. Co.		Rollers, Engines, etc.	3		25		25		1	60
14	Lemmerlaid, H. & Co.		Boxes	1		5		5			
15	Lewis, G. B. Co.		Ice Keepers' Supplies		1	58		58	4	2	120
16	Watertown Daily Times		Printers	1		6		6			gas
17	Watertown Electric Co.		Electric Light	1		4		4		3	225
18	Watertown Gas Co.		Gas	1		4		4		1	gas
19	Watertown Gazette		Printing		1	3		3			
20	Watertown Mfg. Co.		Machinists	1		4		4		1	20
21	Watertown Republicann		Printing	1		3		3			
22	Watertown Steam Laundry		Laundry	1		3	7	10		1	5
23	Watertown Shoe Co.		Shoes	1		34	18	52		1	30
24	Watertown Stone Co.		Cut Stone Contractors	1		7		7		1	36
25	Watertown Table Slide Co.		Table Slides	1		20		20	3	1	50
26	Watertown Veltheimer		Printing	1		2	12	15			gas
27	Woodard & Stone Factory		Confectionery	2	1	43	34	82		2	110
Totals			.....	24	13	445	105	550	12	32	1,588

WATERTOWN.

Under this head are found the orders affecting the factories in Watertown, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out.
2	Swing doors out.
3	Swing doors out.
4	Swing doors out.
5	Swing doors out.
6	Swing doors out.
7	Swing doors out.
8	Swing doors out.
9	Swing doors out.
10	Swing doors out.
11	Swing doors out.
12	Swing doors out.
13	Swing doors out.
14	Swing doors out.
15	Swing doors out.
16	Swing doors out.
17	Swing doors out.
18	Swing doors out.
19	Swing doors out.
20	Swing doors out.
21	Swing doors out.
22	Swing doors out.
23	Swing doors out.
24	Affidavits for two children under 16 years; swing doors out.
25	Swing doors out.
26	Swing doors out.
27	Swing doors out.

WAUKESHA.

The following table, covering several pages, shows for each of the 17 factories in Waukesha, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power, the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION -- WAUKESHA:

NAME OF ESTABLISHMENT.	BUILDINGS.			EMPLOYEES.			BOILERS.	
	Under three stories in height.	3 or more stories in height.	Total.	Males.	Females.	Under 16 years.	Number.	Total horse power.
1 American Mineral Water Co.	1	1	6	6	6	6	1	20
2 Blair Bros.	1	1	7	7	2	2	2	28
3 Curtis Steam Laundry	1	1	2	2	2	1	1	8
4 Henk Mineral Spring Co.	1	1	8	8	1	1	1	12
5 Ladewig Bros.	1	1	5	5	5	1	1	16
6 Milwaukee Electric Ry. and Light Co.	1	1	4	4	6	1	3	450
7 Model Steam Laundry	1	1	1	1	1	1	1	25
8 Sturlan Mineral Spring Co.	1	1	16	16	1	2	2	45
9 Waukesha Arcadian Co.	1	1	14	14	1	30	30	15
10 Waukesha Canning Co.	3	1	68	68	46	2	4	380
11 Waukesha Malleable Iron Co.	2	1	200	200	1	2	2	160
12 Waukesha Mfg. Co.	1	1	7	7	7	14	14	30
13 Waukesha Stone & Quarry Co.	3	1	50	50	50	2	2	180
14 Waukesha Water Co.	1	1	12	12	2	14	12	30
15 White Rock Mineral Spring Co.	2	1	33	33	35	1	1	60
16 Wisconsin Central Railway Shops	6	1	150	150	2	132	2	160
17 Wright's Steam Laundry	1	1	3	3	8	11	1	18
Totals	27	3	538	538	69	657	19	1,612

WAUKESHA.

Under this head are found the orders affecting the factories in Waukesha, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
2	Swing doors out.
3	Swing doors out.
4	Swing doors out; affidavit for one boy under 16 years.
6	Swing doors out.
7	Swing doors out.
13	Swing doors out.
14	Swing doors out.
15	Swing doors out.
17	Swing doors out.

WAUSAU.

The following table, covering several pages, shows for each of the 24 factories in Wausau, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power, the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION — WAUSAU.

FACTORY INSPECTION.

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NAME OF ESTABLISHMENT.		LOCATION AND BUSINESS.		BUILDINGS.		EMPLOYES.			BOILERS.		
				Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
1	Barker & Stewart		Lumber, Lath, etc.	2	.....	132	.....	132	.....	4	400
2	Central Wisconsin, The		Publishing	1	.....	6	.....	6	.....	.....	wat.
3	Curtis & Yale		Sash, Doors, etc.	.....	1	250	.....	250	11	4	600
4	Daily Record		Publishing	1	.....	10	.....	10	.....	1	12
5	Elchert & Werle		Quartz Mill	1	.....	9	.....	9	.....	1	40
6	Goodwill Bros.		Box Shooks	1	.....	180	.....	180	42	4	350
7	Manson, W. R.		Lumber, Lath, etc.	1	.....	65	.....	65	.....	4	200
8	Mathie Brewing Co.		Lager Beer	1	.....	12	.....	12	.....	1	100
9	Miller, J. & A.		Laundry	1	.....	2	.....	2	.....	1	20
10	Mortenson, J., Lumber Co.		Lumber	2	.....	160	.....	160	6	3	250
11	Murry, D. J., Mfg. Co.		Machinery	1	.....	125	.....	125	.....	1	65
12	Ritter & Deutsch		Furniture	1	.....	3	.....	3	.....	.....	.....
13	Rinder, G., Brewing Co.		Lager Beer	.....	1	10	.....	10	.....	2	120
14	Schwentkofske Mill		Lumber	1	.....	4	.....	4	.....	1	35
15	Stewart, Alex., Lumber Co.		Lumber	2	.....	220	.....	220	1	4	330
16	Stolze G., Sons		Bookbinder, etc.	1	.....	8	.....	8	.....	1	135
17	Underwood Veneer Co.		Veneer	1	.....	80	.....	80	20	3	250
18	Wausau Box & Lumber Co.		Boxes, etc.	1	.....	96	.....	96	20	2	250
19	Wausau City Water Works		Water Supply	1	.....	4	.....	4	.....	2	80
20	Wausau Electric Co.		Lighting City	1	.....	4	.....	4	.....	4	3,100
21	Wausau Excelsior Co.		Excelsior	1	.....	14	.....	14	.....	1	150
22	Wausau Herald		Publishing	1	.....	2	.....	2	.....	.....	gas
23	Wausau Novelty Co.		Furniture and Toys	.....	1	80	.....	80	17	1	150
24	Werhelm Mfg. Co.		Sash, Doors, etc.	1	.....	60	.....	60	.....	2	160
Totals		.....		24	3	1,536	12	1,548	118	47	4,529

WAUSAU.

Under this head are found the orders affecting the factories in Wausau, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out; another guard rail on fly wheel to engine.
2	One-story wood. Guard belt and pulley on left side of surfacer; guard or countersink all set screws on shafting where exposed.
3	Affidavits; suction device; three under age discharged; two fire escapes.
4	Swing doors out.
5	Swing doors out.
6	Affidavits; communications from workroom to engineer; guard set screws on main shaft; guard set screw on collar at first bearing where shaft comes out of engine room; provide signal bell in engine room.
7	Cover set screws to shafting; guard drive belt to edger; new step on stairway on outside stairway.
8	Swing doors out.
9	Swing doors out.
11	Swing doors out; provide gate for elevator shaft on second floor; guard large emery wheel and provide suction de vice for same.
12	Swing doors out.
13	Swing doors out.
14	Swing doors out; guard belts and pulleys to two planers on first floor; connections between engine rooms and factory.
15	Affidavits.
16	Affidavits; swing doors out.
17	Guard shaft belt and clutch pulley to veneer cutter; guard exposed set screws on all shafting; swing doors out; one boy under age discharged.
18	Affidavit for one boy; box pulley and belt to automatic cut off saw; guard belt and pulley to planer and remove set screws on collars and box gear on same; guard belt and pulley to matcher; signal bell in engine room; guard belts, pulleys and ends of shafts to surfacers; box or remove all set screws where exposed; guard fly wheel to engine; eighteen boys under age discharged.
19	Swing doors out.
20	Swing doors out; guard fly wheel, pulley and belt.
21	Countersink set screws on shaft in basement running saw pulley; box or guard fly wheel to excelsior press.
22	Swing doors out.
23	Guard set screws on main line shaft overhead on first floor; file affidavits.
24	Swing doors out; guard exposed set screws on shafting; railing on stairs.

SUMMARIES.

The following summaries show, for the factories in the 29 leading manufacturing places in the state, the number of each of the different classes of objects examined, the conditions of same, and the number of orders in each case, as reported by the inspectors during the period covered. A close study of these facts will reveal not only the nature and scope of our duties, but the conditions, as a whole, of the factories included with respect to the factory laws.

- 1 Establishments: Number inspected, 939.
- 2 When established: Five years ago or less, 210; ten years ago but more than five, 246; fifteen years ago but more than ten, 171; more than fifteen years ago, 51.
- 3 Buildings: Number inspected, 1,469.

Height and kind.	1 story.	2 stories.	3 stories.	4 stories.	5 stories.	6 stories.	7 stories.	8 stories.	9 stories.	Totals.
Wood	239	317	71	23	2	.....	2	3	.....	657
Brick	223	225	141	55	11	4	3	.....	.....	667
Stone	17	20	24	4	2	.....	.....	.....	.....	68
Iron	23	29	16	5	.....	1	.....	.....	2	78
Totals	509	591	252	87	15	5	5	3	2	1,469

- 4 Hours of labor daily: Date of inspection, 32 firms, 12 hours; 12 firms, 11 hours; 72 firms, 10 hours; 5 firms, 9.5 hours; 33 firms, 9 hours; 10 firms, 8 hours.
- 5 Number of establishments in operation, 922; idle, 17.
- 6 Number employed: Male, 45,715; female, 6,574; total, 52,289; under 16 years, 2,346; under 14 years; without permit 193, with permit 20.
- 7 Number of firms requiring night work of children, 0; number of children affected by orders, 2,539.
- 8 Boilers: Total number, 1,366; number insured, 827; number of firms using steam for motive power, 702; electricity, 94; gas, 52; water, 44.
- 9 Persons employed on each floor: Basement, 1,151; first, 24,174; second, 12,951; third, 4,674; fourth, 944; fifth, 65; sixth, 2; seventh, 2.
- 10 Fire escapes: Total number, 208; number in good or fair condition, 56; number of buildings three or more stories employing twenty-five persons or more not provided with fire escapes, 55; orders affecting fire escapes, 55.
- 11 Standpipes and automatic sprinklers: Number of buildings having outside standpipes, 71; inside, 385; number having hose connections, 445; number of buildings provided with automatic sprinklers, 179; number of buildings connected with steam pump, 19; number of buildings connected with city hydrant, 158; number of orders, 15.
- 12 Stairways: Number between each floor, basement and first, 1,399; first and second, 968; second and third, 381; third and fourth, 126; fourth and fifth, 28; fifth and sixth, 4.
Number of stairways enclosed, 418; outside stairways, 293; number of orders affecting stairs, 52.

- 13 Elevators: Number, 387; number with cables in fair or good condition, 224; number of automatic doors, 76; swinging, 27; sliding, 34; bar, 129; number with different doors other than automatic on each floor, 63; number operated by boy under 16 years, —; number of orders, 163.
- 14 Communication between workrooms and engineer: Number of buildings where connections are necessary, 448; number provided with the same, 386; number of each kind used: Electricity, 190; tube, 27; whistle, 196; buildings provided with clutch pulleys, 41. Number of orders, 52.
- 15 Machinery: Number of machines or parts of machinery in the various buildings affected by orders issued, 1,133; number of orders, 1,133.
- 16 Emery wheels: Number, 1,536; number in fair condition, 246; average speed, 1,415; number provided with guards, 115; suction devices, 66; number of guards and suction devices ordered, 1,119.
- 17 Hoists: Number, 161; number in good or fair condition, 81; orders affecting same, 80.
- 18 Vats, pans, etc.: Number, 4,664; number provided with safety guards, 1,196; guards not necessary, 2,851; number of orders affecting them, 15.
- 19 Doors or exits: Basement, 242; number first floor, 5,113; number swinging in, 3,213; out, 1,006; both, 6; slide, 1,130; number of buildings on which doors are fastened during working hours as not to permit of ready egress, 2; number of orders affecting doors, 3,215.
- 20 Sanitary condition: Number of rooms poorly ventilated or overcrowded, 6; number of rooms with mechanical ventilation, 738; number of closets, 1,153; number of closets in fair or good condition, 336; number of orders affecting sanitary condition, 323.
- 21 Number of buildings in which explosives or inflammable compounds are kept, 134; orders issued, 1.
- 22 Number of buildings in which men and women are required to clean machinery while it is in motion, 1; orders affecting this, 1.
- 23 Number of buildings in which seats are provided for females, 518; number of orders affecting this, 1.
- 24 Number of accidents, 97.
- 25 Number of buildings in which orders were issued, 785; total number of orders issued, 8,785.

OTHER PLACES.

The following table, covering several pages, shows for each of the 683 factories in other places, which have been inspected from time to time during the years 1899 and 1900, the name, address, kind of business; the number of buildings under three stories and three stories or more in height occupied; the number of male, female, and total persons employed; the number under sixteen years of age; and the number of boilers and power used. The running or index number opposite each firm in this table is also used opposite the orders affecting the same firms as presented under "orders issued." Under "Horse Power, the following abbreviations are used: Gas, for gas or gasoline; elec., for electricity; l's'd, for leased, or when power is obtained from building already included; hand, for hand power.

FACTORY INSPECTION — OTHER PLACES.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.			
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.	
ALBANY, GREEN CO.										
1 Albany Hardware Spec. Co.	Hardware	1	1	2	2	2	2	1	wat.	
2 Albany Linen Mills	Towels	3	1	24	18	42	4	1	wat.	
3 Albany Tannery	Tannery	1	1	1	1	2	1	1	12	
4 Warren & Tompkins	Electric Light and Flour	1	1	4	4	8	4	1	wat.	
Totals		6	3	31	18	49	4	2	12	
AMBERG, MARINETTE CO.										
5 Amberg Granite Co.	Contractors	1	1	150		150		1	100	
6 Pike River Granite Co.	Granite Work	1	1	15		15		1	18	
Totals		2	2	165		165		2	118	
AMERY, POLK CO.										
7 Amery Lumber Co.	Lumber	2		110		110		5	280	
ANIWA, SHAWANO CO.										
8 Monahan, Thos.	Lumber	1		32		32		2	60	
9 Stewart, D. S.	Bicycles	1		36		36		1	90	
Totals		2		68		68		3	140	
ANTIGO, LANGLADE CO.										
10 Antigo Brewing Co.	Brewery	2		6		6		1	40	
11 Antigo Mfg. Co.	Staves and Heading	1		40		40	3	1	75	
12 Antigo Steam Laundry	Laundry	1		2		2	4	1	15	

13	Citizens Brewery	Brewers	1	8	8	1	80
14	Crocker Chair Co.	Chairs	4	1	48	2	180
15	Frost Veneer Sealing Co.	Veneer Sealing	1	1	65	3	240
16	Kellogg, T. D. Mfg. Co.	Lumber	2	60	82	1	240
17	Kingsbury & Henshaw	Flour Mill	1	10	10	2	140
18	Kingsbury & Henshaw	Saw Mill	1	15	18	1	led.
19	Sheneman, O. H. & Co.	Neck Yokes, etc.	1	10	12	1	35
20	Pioneer Iron Works	Repairing	2	6	6	1	25
	Totals		15	4	274	17	1,065
ARROR VITAE, VILAS CO.							
21	Rose Lumber Co.	Lumber	4	284	1	5	320
ATHENS, MARATHON CO.							
22	Athens Mfg. Co.	Lumber and Hoops	1	40	40	2	130
23	Braun, M., & Sons	Staves and Shingles	1	25	25	2	185
24	Ceres Roller Mills Co.	Flour and Feed	1	4	4	1	100
25	Degner, Henry	Hending	1	18	18	1	80
26	Rietbrock & Halsey	Lumber	2	60	60	3	240
	Totals		5	147	147	9	645
BARABOO, SAUK CO.							
27	Baraboo Gas & Electric Co.	Gas and Electric Light	1	5	5	2	76
28	Baraboo Iron Works	Foundry	1	1	2	1	gas
29	Baraboo Republic	Printing	1	6	4	1	wat.
30	Baraboo Steam Laundry	Laundry	1	3	7	1	15
31	Baraboo Towel Mills	Towels and Rugs	1	12	16	3	wat.
32	Buhlman, George, Brewery	Brewer	1	6	6	1	20
33	C. & N. W. Ry Co.	Car Repairing	1	175	175	2	60
34	Effinger, Fred	Brewer	1	5	5	1	30
35	Gem City Canning Co.	Canning	1	8	10	1	15
36	Gem City Laundry	Laundry	1	36	38	1	Idle.
37	Island Woolen Mill Co.	Woolen Cloth	3	35	45	2	60
	Totals		12	1	400	16	276
BARRON, BARRON CO.							
38	Barron Creamery	Butter	1	1	1	1	15
39	Barron Co. Shield	Printing	1	1	2	1	hand
40	Barron Mfg. Co.	Lumber	1	6	6	1	wat.
41	Barron Republican	Printing	1	1	1	1	hand

FACTORY INSPECTION—OTHER PLACES—Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.		
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
BARRON, BARRON CO.—Continued.									
42 Barron Roller Mill	Flour and Feed	2	1	6		6		2	115
43 Barron Stave & Heading Co.	Staves and Heading	4		9	9	18		1	12
44 Barron Woolen Mill Co.	Woolen Goods	1		12		12		1	12
45 Carey, G. H.	Brick								
Totals		11	1	48	10	58		5	142
BAYFIELD, BAYFIELD CO.									
46 Electric Lt. & W. W. Co.	Light and Water	1		2		2		2	75
47 Pike, R. S., Lumber Co.	Lumber	1		156		156		5	140
48 Wachmuth, H. J., & Co.	Dressed Lumber	1		17		17		1	110
Totals		3		175		175		8	325
BEAR CREEK, OUTAGAMIE CO.									
49 Murphy, P. D.	Feed Mill, Elevator	2		3		3		1	40
50 Raiser, J. W., & Sons	Lumber	1		8		8		2	80
Totals		3		11		11		3	120
BEAVER DAM, DODGE CO.									
51 Beaver Dam Cotton Mill	Cotton Cloth	1	1	60	100	160	23	3	240
52 Beaver Dam Machine Shop	Machinery	1		4		4			55
53 Beaver Dam Malleable Iron Co.	Malleable Iron	4		174	1	175	8	1	100
54 Beaver Dam Overall Mfg. Co.	Overalls	1		2	4	6			elec.
55 Beaver Dam Woolen Mill	Woolen Goods	2	1	46	30	76	3	2	140
56 Beaver Dam Worsted Co.	Worsted Goods	3	1	53	50	103	9	1	1

57 Bon Ton Bottling Works	Soft Drinks	1	1	5	5	5	1	5	1	wat.
58 Empire Roller Mills	Flour	6	2	112	112	112	2	136		
59 Rowell, J. S., Mfg. Co.	Machinery									
Totals		13	6	460	135	645	43	10	735	
BERLIN, GREEN LAKE CO.										
60 Berlin Glove & Mitten Co.	Gloves and Mittens	1	1	4	10	14				hand
61 Berlin Whip Co.	Gloves and Mittens	1	1	9	17	26				hand
62 Illinois & Wisconsin Stone Co.	Stone Work	2	1	156		156	2	200		
63 Johnson, Niels	Machinery	1		4		4	1	25		
64 Luther, Henry, Co.	Brooms	1	1	19	1	20	3	1		gas
65 Murphy, J. E.	Tubs, Boxes, etc.	1	1	12		12				
66 Rounds & Buck	Tannery	1	1	7		7				
67 Russell Glove Co.	Gloves and Mittens	1	1	9	84	93	5	1	30	gas
68 Sears, H. D.	Tannery	1	1	5		5		1	3	
69 Talcott, F. B. Estate	Gloves and Mittens	1	1	2	20	22				hand
70 Truesdell, H. C., Co.	Fur Goods	1	1	19	8	27	1	1	40	
71 Wright Co.	Shoes and Pats		1	24	4	28			1sd.	
Totals		11	3	270	144	414	9	7	313	
BIG BEND, WAUKESHA CO.										
72 Hygela Spring Co.	Spring Water	1	1	1		1		2	205	
73 McKenzie, Clarence	Lumber and Feed	1	1	6		6		1	30	
74 McKenna, Frazer Co.	Butter	1	1	2		2		1	20	
Totals		3		9		9		4	255	
BIRNAMWOOD, SHAWANO CO.										
75 Dalley Bros.	Lumber	1	1	10		10		1	Idle	
76 Van Doeren & Andrews	Lumber-- Excelsior	3		60		60		4	400	
Totals		4		70		70		5	400	
BLOOMER, CHIPPEWA FALLS CO.										
77 Bloomer Advance	Printing	1	1	2	2	4				
78 Bloomer Machine Works	Repairing	3	1	1		1		1		
79 Ole Christianson	Lumber	3	1	5		5		1	6	
80 Rasmus & Christianson	Grain	1	1	2		2		1	20	
81 Rolling Mill Co.	Flour	1	1	4		4		1	20	wat.
Totals		12		14	2	16		3	46	

FACTORY INSPECTION—OTHER PLACES—Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYEES.			BOILERS.		
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
BOSCABEL, GRANT CO.									
82) Abelter, M.	Wagons, etc.	1		4		4		band	2
83) Boscobel Bottling Works	Soft Drinks	1		3		3		1	20
84) Boscobel Brewery	Brewery		1	4		4		2	160
85) Boscobel Light & Power Co.	Electric Light	1		2		2		3	60
86) Boscobel Paper Mills	Flour and Feed	1		3		3		4	50
87) Botten, L. P.	Wagons, etc.	1		3		3		1	22
88) Dial Enterprise	Printing	1		4		4		1	gas
89) Ruka Bros. Mfg. Co.	Carriages, etc.	3		20		20		1	50
90) Rustic Novelty Works	Rustic Chairs	1		1		1		1	2
Totals		10	1	44		44		7	284
BRANDON, FOND DU LAC CO.									
91) Wheeler, Geo. F.	Butter Tubs	1		10		10		1	45
BRILLION, CALUMET CO.									
92) Altman & Schreiber	Wagons, etc.	1		3		3		1	20
93) Behnke, C. W., & Son	Flour		1	5		5		1	100
94) Brillion Furniture Co.	Tables	1		40		40		1	45
95) Brillion Furniture Co.	Warehouse	1		6		6		5	6
96) Brillion Iron Works	Machine Shop	1		5		5		1	gas
97) Brillion Lumber Co.	Planing Mill	1		8		8		1	50
98) Grimsby Lime Co.	Lime	1		50		50		50	
99) Otto, F. A.	Carriages, etc.	1		5		5		5	
Totals		5	3	122		122		4	215

FACTORY INSPECTION.

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BRODHEAD, GREEN CO.		Wagons and Carriages										Machine Shop										Electric Light										Printing										Machinery										Printing										Feed Mill										Laundry										Wagons and Carriages										Totals																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
100	Bartlett & Co.	1	1	6	6	1	1	2	2	1	1	2	2	3	3	1	1	7	7	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

141	Rohrer Mfg. Co.	Lumber and Flour	1	4	4	2	120
142	Zachow & Besardich	Repairing Machinery	1	3	3	1	15
	Totals		6	2	28	2	6
COLBY, CLARK CO.							
143	Colby Stave & Heading Co.	Staves and Heading	1	22	22	2	70
144	Conner & Co. R.	Lumber	2	20	20	3	300
145	Haslbeck, Joe	Brick	1	6	4	1	35
146	Peterson Mfg. Co., N. P.	Logging Outfits	1	6	6	1	50
147	Salter, R. P.	Office Fixtures	1	12	12	1	455
	Totals		6	66	4	70	7
COLEMAN, MARINETTE CO.							
148	Bowles Bros.	Lumber	1	40	40	1	100
DANCY, MARATHON CO.							
149	Darlington Democrat	Printing	1	3	1	3	20
150	Darlington Elec. Lt. & Water Co.	Supply Light and Water	1	2	2	1	175
151	Kannitz Bros.	Feed Mill	1	1	1	1	20
152	McCarville, F. C.	Feed Mill	1	1	1	1	20
153	Republican Journal	Printing	1	5	5	1	gas
	Totals		5	12	11	3	215
DEHAVAN, WALWORTH CO.							
154	Delavan Steam Laundry	Laundry	1	5	4	1	15
155	Hong, H. W.	Grain Elevator	1	5	5	1	25
156	Reader, J. B.	Wind Mills, etc.	1	5	5	1	25
	Totals		3	15	4	3	65
DE PERE, BROWN CO.							
157	American Writing Paper Co.	Paper	4	136	136	272	6
158	De Pere Light & Power Co.	Light and Power	1	3	3	3	1,200
159	Deismann Milling Co.	Flour and Feed	1	19	19	1	25
160	Johnson & Son, J. W.	Lumber	1	26	26	1	25
161	Johnson & Son, C. A.	Machinery	1	15	15	1	40
162	Wolf & Larscheldt	Lumber	1	15	15	1	40
	Totals		7	6	218	354	7

FACTORY INSPECTION—OTHER PLACES—Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.		BOILERS.			
		Under three stories in height	3 or more stories in height	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
DODGEVILLE, IOWA CO.									
163 Chronicle, The	Printing	1	1	8	2	5	1	2	gas
164 Dodgeville Electric Light Co.	Electric Light	1	1	1	1	1	1	1	140
165 Dodgeville Water Works	Supply Water	1	1	1	1	1	1	1	80
166 Draper, R. A.	Butter Tubs	1	1	3	3	3	3	3	gas
167 Harrison Mine	Mining	1	1	3	3	3	3	3	hand
168 Oscola Mine	Mining	1	1	3	3	3	3	3	hand
169 Owens & Wilcox	Mining	1	1	4	4	4	4	4	hand
170 Republic, The	Printing	1	1	2	1	3	3	3	gas
171 Snow Ball Mine	Mining	1	1	5	5	5	5	5	hand
172 Stratman F. W.	Wagons, etc.	1	1	20	20	20	20	1	30
173 Sunset Mine	Mining	1	1	8	8	8	8	1	hand
174 Thompson & Munns	Flour and Feed	1	1	2	2	2	2	1	40
Totals .....	.....	12	12	55	3	55	5	5	280
DRUMMOND, BAYFIELD CO.									
175 Rust, Owen, Lumber Co.	Lumber, etc.	4	4	286	286	286	8	8	575
DUNDAS, CALUMET CO.									
176 Dundas Woodenware Co.	Boxes	1	1	22	22	22	2	1	80
177 Dundas Butter & Cheese Co.	Butter and Cheese	1	1	2	2	2	1	1	16
Totals	2	2	24	24	24	2	2	96
DURAND, PEPIN CO.									
178 Durand Brewing Co.	Brewery	1	1	4	4	4	1	1	80

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179	Durand Electric Light Co.	Electric Light	1	2	2	1	100
180	Zelsinger Bros.	Planing Mill	1	2	2	1	20
	Totals		3	8	28	3	200
	EAU GALLE, DUNN CO.						
181	Durand Light & Power Co.	Electric Light	1	2	2		wat.
182	Durand Light & Power Co.	Grist Mill	1	2	2		wat.
	Totals		1	4	4		
	EDGERTON, ROCK CO.						
183	Edgerton Tobacco Reporter	Printing	1	3	3		wat.
	EIKHORN, WALWORTH CO.						
184	Eikhorn Carriage & Wagon Co.	Carriages and Wagons	2	11	11	1	20
185	Eikhorn Creamery Supply Co.	Creamery Supplies	1	2	2	1	4
186	Eikhorn Electric Light & Water Co.	Light and Water	1	3	3	2	150
187	Eikhorn Lumber & Elevator Co.	Grain and Feed	1	5	5	1	40
188	Eikhorn Steam Laundry	Laundry	1	1	1	1	10
189	Frater Bros.	Planing Mill	1	3	3	1	20
190	Sprague Bros.	Brick, Tiles, etc.	1	10	10	1	30
	Totals		7	35	38	8	274
	ELLIS JUNCTION, MARINETTE CO.						
191	Zech, H., & Co.	Lumber	1	75	75	3	270
	ELMHURST, LANGLADE CO.						
192	Wunderlich Bros.	Saw Mill	1	22	22		elec.
	ELMWOOD, PIERCE CO.						
193	Elmwood Mfg. Co.	Staves and Heading	4	5	5	2	65
194	Featherston, D. S.	Staves and Heading	1	30	30	1	35
195	Glenwood Mfg. Co.	Furniture	1	28	28	1	100
196	Kelly & Hagerman	Lumber	1	9	9	1	50
	Totals		7	72	72	6	250
	EMERALD, ST. CROIX CO.						
197	Flemming, Wm.	Lumber	1	26	26	2	Idle

FACTORY INSPECTION — OTHER PLACES—Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYEES.			BOILERS.		
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
EVANSVILLE, ROCK CO.									
198 Baker Mfg. Co.	Pumps, etc.	7	.....	56	.....	56	1	2	130
199 Evansville Steam Laundry	Laundry	1	.....	2	2	4	.....	1	8
200 Morgan, J. W., & Co.	Carriages	1	.....	6	.....	6	.....	.....	.....
Totals .....	.....	9	.....	64	2	66	1	3	138
FAIRCHILD'S, EAU CLAIRE CO.									
201 Foster Lumber Co., H. C.	Lumber	7	.....	540	.....	540	.....	3	250
FLAMBEAU, CHIPPEWA CO.									
202 Flambeau Lumber Co.	Lumber	4	.....	248	2	250	.....	4	600
FORT ATKINSON, JEFFERSON CO.									
203 Cornish, Curtis & Greene Mfg. Co.	Butter and Cheese	4	1	77	3	80	2	1	100
204 Fort Steam Laundry	Laundry	1	.....	3	4	3	.....	2	12
205 Hoard's Creamery	Butter	2	.....	27	3	30	.....	1	55
206 Hoard's Dairyman	Printing	1	.....	18	18	34	.....	2	20
207 Hoard's Northwestern Mfg. Co.	Wagons, etc.	4	3	190	10	200	1	2	175
208 Pounder, Geo. H.	Brooms and Harrows	1	.....	7	.....	7	.....	1	15
209 Wilcox, Morris Co.	Coal and Grain	1	.....	5	.....	5	.....	1	60
210 Zanger, Hoffman & Son	Elevator	1	.....	4	.....	4	.....	1	80
Totals .....	.....	15	4	331	36	367	3	10	467
GILE, IRON CO.									
211 Montreal River Lbr. Co.	Lumber	2	.....	211	.....	211	4	8	550

GILMAN, PIERCE CO.

212	Jenson, E.	Lumber	1	7	7	1	1	50
213	Madsen, Nels	Lumber	1	9	9	1	1	25
214	Matheson, Ole	Lumber	1	10	10	1	1	45
	Totals		3	26	26	3	3	120

GLENWOOD, ST. CROIX CO.

215	Augustin, C. J.	Printing	1	3	1	4	hand	
216	Glenwood Mfg. Co.	Lumber and Staves	12	294	286	15	1	75
217	Glenwood Roller Mills	Flour and Feed	1	3	3	1	1	75
	Totals		14	290	293	15	1	75

GRAFTON, OZAUKEE CO.

218	Grafton Mills	Flour and Feed	1	5	5	1	1	75
219	Standard Tanning Co.	Leather	2	30	30	1	1	75
	Totals		2	35	35	1	1	75

GRAND RAPIDS, WOOD CO.

220	Centralla Lumber Co.	Planing Mill	1	6	6	1	1	40
221	Centralla Paper Pulp & N. Co.	Paper and Pulp	5	60	6	3	3	wat.
222	Centralla Water Wks.	Supply Water	1	2	2	2	2	200
223	Grand Rapids Foundry Co.	Machine Shop	2	15	15	1	1	wat.
224	Grand Rapids Lbr. Co.	Lumber and Lath	2	70	70	6	6	300
225	Grand Rapids Table Co.	Extension Tables	2	20	20	1	1	80
226	Grand Rapids Tribune	Printing	1	2	2	4	4	wat.
227	Jackson Milling Co., The	Flour and Feed	1	12	12	1	1	250
228	McKinnon Mfg. Co.	Hubs and Spokes	1	45	45	4	4	2
229	Pioneer Wood Pulp Co.	Wood Pulp Board	1	15	15	1	1	20
230	Riverside Steam Laundry	Laundry	1	2	2	4	4	250
231	Twin City Electric Light Co.	Electric Light	1	2	2	2	2	hand
232	Wood County Reporter	Printing	1	4	4	6	6	1,140
	Totals		18	255	11	265	7	15

GREENWOOD, CLARK CO.

233	Jordan, A. E.	Lumber	1	14	14	1	1	40
234	Nat. Coopersage & W. Co.	Staves and Heading	1	40	40	2	2	200
	Totals		2	54	54	2	3	240

FACTORY INSPECTION - OTHER PLACES - Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.		BOILERS.	
		Under three stories in height.	Four or more stories in height.	Males.	Females.	Total.	Under 16 years.
							Number.
							Total horse power.
HALES CORNERS, MILWAUKEE CO.							
235	Hales Corners Roller Mills	2		5		5	1 80
HARTFORD, WASHINGTON CO.							
236	Hartford Machine Shops	1		3		3	gas
237	Hartford Plow Wks.	2		18		18	1 85
238	Hartford Roller Mills	1		3		3	1 20
239	Hartford Tannery	1		3		3	1 20
240	Nehrlass Casket Co.	2		12		12	1 80
241	Place, W. B. & Co.	1		8		8	1 20
242	Partz & Werner	1		8		8	1 100
243	Partz Bros.	1		6		6	1 60
244	Uher Bros.	1		14		14	1 60
245	Uher, A., & Bros.	1		7		7	1 60
	Totals	10	3	80	21	101	1 8 465
HATCHVILLE, DUNN CO.							
246	Thompson, W. H.	1		14		14	1 40
HAYWARD, SAWYER CO.							
247	City Water Plant	1		8		8	2 150
248	Hayward Republican	1		1		1	gas
249	New Richmond Roller Mills	1		3		3	1 40
250	North Wisconsin Lumber Co., The	4		240		240	11 1,060
	Totals	8	1	247	1	248	14 1,250

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251	Yawkey Lumber Co.	Lumber	4	160	160	3	240
	HILBERT, CALUMET CO.						
252	Hilbert Cheese Box Factory.....	Boxes	1	10	10	1	40
	HORICON, DODGE CO.						
253	Flechaumer, C. Sons & Co.	Interior Wood Work	1	13	13	1	20
254	Horicon Wind Mill Co.	Wind Mill	1	6	6	1	20
255	Van Brunt & Wilkins Mfg. Co.	Seeders	4	60	61	2	120
	Totals		6	79	1	4	160
	HOULTON, ST. CROIX CO.						
256	East Side Lumber Co.	Lumber	3	40	40	7	375
	HUDSON, ST. CROIX Co.						
257	Burton & Mules	Laundry	1	2	3	1	10
258	Casamood Brewing Co.	Brewers	1	2	9	1	5
259	Central Lumber Co.	Lumber	2	148	148	5	250
260	City Pumping Station	Water Supply	1	2	2	2	100
261	Hochateln, A. & J.	Brewers	1	2	2	1	13
262	Hoford, George K.	Feed Mill	1	3	3	3	gas
263	Hudson Star Times	Printing	1	4	4	1	wat.
264	Interstate Mfg. Co.	Bee Keepers' Supplies	2	6	3	8	1
265	Omaha R. R. Shops	Repair Shops	7	318	318	4	400
266	True Republican	Printing	1	1	2	3	wat.
	Totals		15	3	487	8	838
	HURLEY, IRON CO.						
267	Twin City Iron Works	Repairing	2	14	14		gas
	IRON RIVER, BAYFIELD CO.						
268	Alexander & Edgar Lumber Co.	Lumber	2	300	300	3	240
	IRVINGTON, DUNN CO.						
269	Coffin Box & Lumber Co.	Boxes and Lumber	1	148	2	150	30

FACTORY INSPECTION — OTHER PLACES — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYEES.			BOILERS.		
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
JEFFERSON, JEFFERSON CO.									
270 Ambrose, F. A.	Machinery	1	1	4	7	4	1	15	gas
271 Banner Printing Co.	Printing	1	1	7	7	7	1	200	
272 City Brewery	Brewery	1	2	30	20	80	2	100	
273 Copeland & Ryder Co., The	Shoes	1	1	78	22	100	2	100	
274 Fernholz Lumber Co.	Sash, Doors, Etc.	1	1	16	13	15	1	40	
275 Helmet, John J.	Tannery	1	1	3	3	3	1	20	
276 Jefferson Brewing & Malting Co.	Brewers	1	1	3	3	3	1	8	
277 Jefferson Brick & Tile Co.	Brick and Tile	1	1	40	3	40	1	100	
278 Jefferson Electric Co.	Electric Light	1	1	2	2	2	1	200	
279 Jefferson Flouring Mill	Flour and Feed	1	1	3	3	3	2	wat.	
280 Jefferson Printing Co.	Printing	1	1	5	5	9	1	gas	
281 Jefferson Steam Laundry	Laundry	1	1	1	1	2	1	10	
282 John & Beck Shoe Co.	Shoes	1	1	5	1	7	1	gas	
283 Kemmeter Bros.	Brick	1	1	4	4	4	1	40	
284 Lytle-Stoppenbach Co., The	Malt	1	1	10	10	10	1	100	
285 Lytle-Stoppenbach Co., The	Grain Elevator	1	1	2	2	3	1	35	
286 Metzen, Mrs. M. C.	Marble and Granite	1	1	3	3	3	1	20	
287 Stoppenbach's Sons	Pork Packing	1	1	7	7	7	1	80	
288 Troeger, George	Tannery	1	1	4	4	4	1	40	
289 Vaughan, O. C., Mfg. Co.	Wagons, Etc.	3	3	20	20	20	1	30	
290 Wisconsin Mfg. Co.	Chairs	1	1	40	3	43	1	100	
Totals .....	.....	20	7	286	23	315	3	20	1,133
JUNCTION CITY, MONROE CO.									
291 Portage Co. Graphite Co.	Graphite	1	1	10	10	10	1	1	75

JUNEAU, DODGE CO.

222	Bermann, Chas., Boiler Shop	1	3	3	1	10
223	City Roller Mills	4	4	4	1	70
224	Peters Furniture Factory	1	32	2	1	60
225	Reul, John F.	1	2	2	1	12
	Wind Mills, Etc.					
	Totals	7	40	41	4	152

KEWAUNEE, KEWAUNEE CO.

226	Borgman, John M.	1	8	8	1	50
227	Hannachek, Frank	1	15	15	1	20
228	Kewaunee Enterprise	1	3	3	1	gas
229	Kewaunee Iron Works	1	3	3	1	15
230	Kewaunee Lusty	1	2	3	1	hand
231	Kewaunee Printing Co.	1	2	1	3	hand
232	Manger, E. C., & Son	1	14	14	1	40
233	Seyk, W., Co.	1	7	7	1	82
234	Stroboda, Jos.	1	5	5	1	18
235	Ziemer, August	1	3	3	1	12
	Totals	9	61	65	7	237

KIEL, MANITOWOC CO.

236	Kiel Flouring Mills	1	4	4	1	wat.
237	Kiel Machine Shop	1	2	2	2	2
238	Kiel Mfg. Co.	1	80	80	5	160
239	Kiel Wooden Ware Co.	2	55	55	2	80
240	Rothman, Geo., Wagon Shop	1	2	2	2	2
241	Welkopf	1	2	2	2	2
	Totals	5	145	145	5	240

KILBOURN, COLUMBIA CO.

242	Kilbourn Machine Co.	1	9	9	1	25
243	Kilbourn Mirror-Gazette	1	2	4	1	hand
	Totals	2	11	13	1	25

328	Graves, A. A.	Lumber	2	40	40	3	180
329	Ruplinger & Co.	Lumber	2	26	25	2	156
	Totals		5	71	71	6	370
MARION, WAUPACA CO.							
330	Hoffman, F. K.	Wagons	1	2	2		wat.
331	Marion Mills	Flour and Feed	1	2	2		gas
332	McFaghron, H. E., Grain Co.	Furniture	1	8	8	1	40
333	Neas Bros., Furniture Factory	Flour	2	4	4	1	70
334	Rodgers & Johnson	Excelsiors	1	2	2	1	8
	Totals		5	18	18	3	118
MATTOON, SHAWANO CO.							
337	Wisconsin Timber & Land Co.	Hardwood Lumber	3	150	150		
338	Mattoon R. R. Co.	Car Repairing	2	5	5	1	12
339	Antigo Mfr. Co.	Lumber					Idle
	Totals		5	155	155	1	12
MAYVILLE, DODGE CO.							
338	American Bottle Cover Mfg. Co.	Straw Covers	1	6	6	1	Idle
339	Boehmer, C. B.	Laundry	1	2	1		Idle
340	Boehmer Bros.	Machine Shop	2	7	7	1	20
341	Buerger Maltng. Co.	Malt	2	15	15	1	Idle
342	Dodge County Pioneer	Printing	1	8	8	2	gas
343	Frieble Bros.	Coopers	1	2	2		
344	Mayville Furniture Co.	Spinning Wheels	1	5	5	1	25
345	Mayville Machine Shop	Repairing	1	2	2		gas
346	Mayville Roller Mills	Flour	1	4	4	1	90
347	Mayville Saw Mill	Lumber	1	2	2		wat.
348	Northwestern Iron Co.	Pig Iron	2	110	110	9	900
249	Viegler Brewing Co.	Brewers	1	4	4	1	15
	Totals		15	167	174	2	1,060

FACTORY INSPECTION - OTHER PLACES—Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYEES.			BOILERS.		
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
MEDFORD, TAYLOR CO.									
350 City Printing Co.	Printing	1	1	2	1	3	1	1	60
351 Electric Light Plant	Lighting Plant	1	1	4	1	5	1	1	40
352 Medford Brewery	Brewing	1	1	4	1	5	1	1	300
353 Medford Democrat	Printing	1	1	2	1	3	1	1	300
354 Medford Mfg.	Lumber	3	1	60	1	61	1	1	75
355 Medford Roller Mills	Flour and Feed	1	1	1	1	2	1	1	60
356 Medford Sash and Box	Printing	1	1	15	1	16	1	1	300
357 Pollard & Son, O. D.	Lumber	1	1	100	1	101	1	1	gas
358 Shaw, Fayette	Leather	4	1	1	1	2	1	1	gas
359 Taylor, Co. Star & News	Printing	1	1	2	1	3	1	1	12
360 Der Wadboote	Printing	3	1	3	1	4	1	1	367
361 Weale Bros.	Wagons	1	1	4	1	5	1	1	867
362 Zirngibbel, M.	Wagons	1	1	4	1	5	1	1	867
Totals		18	2	207	5	212	16	16	867
MELLEN, ASHLAND CO.									
363 Fayette Shaw & Co.	Leather	4	1	90	1	91	1	1	600
364 Foster, Geo. E., Lumber Co.	Lumber	2	1	45	1	46	1	1	240
Totals		6	2	135	2	137	2	2	840
MINERAL POINT, LAFAYETTE CO.									
365 American Steam Laundry	Laundry	1	1	2	6	8	1	1	6
366 Goldsworthy Mining Co.	Mining	1	1	20	1	21	1	1	20
367 Iowa County Democrat	Printing	1	1	5	1	6	1	1	3
368 Kelly Co., The	Asbestos Goods	1	1	8	2	10	1	1	60

369	Martin, John C.	Grist Mill	1	1	2	2	2	1	15
370	Mineral Point Electric Light Co.	Supply Light	1	1	2	2	2	2	250
371	Mineral Point Sulphuric Acid Works	Sulphuric Acid	2	1	36	36	2	2	310
372	Mineral Point Tribune	Printing	1	1	4	4	1	1	gas
373	Mineral Point Water Works	Supply Water	1	1	1	1	2	2	250
374	Mineral Point Zinc Co.	Oxide of Zinc	4	3	176	4	180	6	500
375	Tornado Brewery	Brewery	1	1	6	6	1	1	15
	Totals		15	3	262	12	274	17	1,429
MONROE, GREEN CO.									
376	Anglo Swiss Condensed Milk Co.	Condensed Milk	1	1	10	10	1	2	130
377	Blumer Bottling Works	Beer	1	1	1	1	1	1	lad.
378	Churchill, C. B.	Brick	1	1	13	13	1	1	20
379	Fitzgibbons Bros.	Carriages	1	1	40	40	1	1	8
380	Freese, Fritz	Brick	1	1	3	3	1	1	gas
381	Green County Herold	Printing	1	1	3	3	1	1	gas
382	Lang, A. & Sons	Carriages	3	3	25	25	2	2	90
383	Manning, E. J.	Machinery	1	1	2	2	1	1	8
384	Monroe Brewery	Brewery	1	1	10	10	2	2	180
385	Monroe Daily Journal	Printing	1	1	6	6	1	1	gas
386	Monroe Elec. & Power Co.	Electric Light	1	1	3	3	2	2	300
387	Monroe Evening Times	Printing	1	1	8	8	1	1	gas
388	Monroe Planing Mill	Sash, Doors, etc.	1	1	15	15	1	1	40
389	Monroe Scenting	Printing	1	1	5	5	1	1	gas
390	Monroe Steam Laundry	Laundry	1	1	1	1	1	1	18
	Totals		17	2	150	1	151	12	738
MORRIS, SHAWANO, CO.									
391	Buchstatt, Sprague Lumber Co.	Saw Mill	2	2	60	60	3	3	120
392	Morris Mfg. Co.	Saw Mill	2	2	26	26	1	1	125
393	Stewart, D. S.	Bicycle Rims	1	1	18	18	1	1	125
	Totals		5	5	104	104	5	5	370
MOSINEE, MARATHON CO.									
394	Dessert, Joseph, Lumber Co.	Lumber	4	4	215	215	4	4	320
395	Mukwonago Canning Co.	Canning Tomatoes	2	2	30	55	15	2	60
396	Mukwonago Creamery	Butter	1	1	2	2	2	1	15
397	Mukwonago Roller Mills	Flour and Feed	1	1	2	2	2	2	wat.
	Totals		8	1	34	55	38	15	75

417	Republican & Press	Printing	1	1	2	2	4	1	6
418	Wisconsin Furniture Mfg. Co.	Furniture	1	1	44	44	1	2	200
419	Wolf & Karman	Wagons	1	1	6	6	1	1	16
	Totals .....	.....	10	2	83	3	96	2	853
420	NEKOOSA, WOOD CO.								
	Nekoosa Paper Co.	Paper, Pulp, etc.	7	1	310	15	335	7	2,200
	NEW HOLSTEIN, CALUMET CO.								
421	Dumke & Co., C. F.	Flour and Feed	1	1	3	3	3	1	75
422	Greves & Iverson	Grain Elevator	1	1	2	2	2	1	gas
423	Lawson & John Mfg. Co.	Machinery	1	1	9	9	9	2	gas
424	New Holstein Canning Co.	Canning	1	1	80	20	100	1	130
425	Timm & Co., H. C.	Grain Elevator	1	1	3	3	3	1	gas
	Totals .....	.....	3	2	97	20	117	1	205
	NEW LONDON, WAUPACA CO.								
426	Andrne & Co., H. G.	Furniture	2	1	40	3	40	5	150
427	Footo Co., Exc. Mills, A. D.	Flour	1	1	3	3	3	1	60
428	Knapstein & Co., F.	Brewery	1	1	7	7	7	1	35
429	Madson, H. P.	Repairing	1	1	3	3	3	1	16
430	Melkjohn & Hutton	Lumber	2	1	110	3	110	4	150
431	New London Bent Wood Co.	Bicycle Rims	2	2	32	2	32	1	100
432	New London Electric Light Co.	Lighting	1	1	2	2	2	2	150
433	New London Iron Works	Machinery	1	1	5	5	5	1	20
434	New London Press	Printing	1	1	2	2	2	1	8
435	Page & Lyon Mfg. Co.	Bee Hives	2	1	31	4	35	1	70
436	Republican, The	Printing	1	1	3	2	5	1	gas
	Totals .....	.....	13	2	238	8	246	5	759
	NEW RICHMOND, ST. CROIX CO.								
437	City Water Works Co.	Supply Water	1	1	2	2	2	1	elec.
438	Jungers, H. M. Novelty Wks.	Wood Work	1	1	2	2	2	1	elec.
439	Villio River Lumber Co.	Lumber	2	1	50	1	51	2	160
440	New Richmond Roller Mill Co.	Flour	3	1	25	1	26	1	elec.
441	Republican Voice, The	Printing	1	1	1	1	2	1	elec.
	Totals .....	.....	8	1	80	3	83	2	160

FACTORY INSPECTION—OTHER PLACES—Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.		
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
NAGARA, MARINETTE CO.									
442 Danielson, George	Saw Mill	1	1	40	...	40	...	1	100
443 Kimberly & Clark	Paper	4	1	330	20	350	...	4	200
Totals .....	.....	5	1	370	20	390	...	5	300
OLIVET, PIERCE CO.									
444 Hawn, C. A., & Son	Lumber	1	...	22	...	22	...	2	120
ONALASKA, LA CROSSE CO.									
445 Nicholas Lumber Co.	Lumber	1	1	110	10	120	...	5	Idle
OMRO, WINNEBAGO CO.									
446 Austrian & Lindaty	Flour	1	...	7	...	7	...	1	100
447 Dean Bros.	Machine Shop	1	...	3	...	3	...	...	gas
448 Morton, C. C. Co.	Wood Work	1	...	4	...	4	...	1	35
Totals .....	.....	3	...	14	...	14	...	2	135
OSCEOLA, POLK CO.									
449 Osceola Rolling Mill	Flour and Feed .....	...	2	7	1	8	...	...	wat.
450 Osceola Sun	Printing	1	...	2	...	2	...	...	gas
451 Polk Co. Press	Printing	1	...	1	...	1	...	1	...
Totals	2	2	10	1	11

Total horse power.

Total.

Total.

Total.

Total.

Total.

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Total.

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Total.

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Total.

Total.

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PESHITGO, MARINETTE CO.					
452	Peshitgo Flour Mill Co.				
453	Peshitgo Lumber Co.				
454	Wls. & Mich. Ry. Co.				
Totals					
PHILLIPS, PRICE CO.					
455	Davis Lumber Co., J. R.				
456	Messer Bros.				
457	Phillips Times, The				
458	Shaw Fayette				
Totals					
PLATTEVILLE, GRANT CO.					
459	Roll, W. J.				
460	Crystal Steam Laundry				
461	Grant County News				
462	Grant County Witness				
463	Grindell, John				
464	Hoppe, Fred				
465	Mound City Broom Factory				
466	Plapp, J. D.				
467	Platteville Canning Co.				
468	Platteville Elec. Light & Power Co.				
469	Platteville Journal				
470	Platteville Lead & Zinc Co.				
471	Platteville Water Wks.				
472	Schroeder, W. F.				
Totals					
PLOVER, PORTAGE CO.					
473	Plover Paper Co.				
PLUM CITY, PIERCE CO.					
474	Partridge, E., & Sons				

FACTORY INSPECTION — OTHER PLACES — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.		
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
PLYMOUTH, SHEBOYGAN CO.									
475 Plymouth Furniture Co.	Furniture	1	2	90	.....	90	6	2	80
476 Schreiner, A.	Brewers	1	1	12	.....	12	.....	2	80
477 Schwartz Mfg. Co.	Furniture	1	1	12	.....	12	.....	1	70
Totals .....	.....	1	4	114	.....	114	6	5	230
PORTAGE, COLUMBIA CO.									
478 Buckley & Lelsch	Tailors	1	.....	15	4	19	1	.....	.....
479 C. M. & St. P. Ry. Co.	Repair	1	.....	36	.....	36	.....	2	.....
480 Epstein, Henry	Brewers	1	.....	3	.....	3	.....	1	.....
481 Fulberg Bros.	Brewers	.....	1	8	.....	8	.....	1	60
482 Falcomer & Boynton Mfg. Co.	Clothing	1	.....	1	11	12	.....	1	6
483 Portage Democrat	Printing	1	.....	6	2	8	.....	.....	gas
484 Portage Hosiery Co.	Woolen Hosiery	3	.....	20	95	115	27	1	50
485 Portage Steam Laundry	Laundry	1	.....	2	5	7	.....	1	20
486 Portage Underwear Co.	Underwear	1	.....	3	35	38	4	.....	gas
487 Wisconsin State Register	Printing	1	.....	4	3	7	.....	.....	gas
488 York, I. W.	Flour and Feed	1	.....	6	.....	6	.....	1	125
Totals .....	.....	12	1	104	155	259	32	8	301
PORT EDWARDS, WOOD CO.									
489 Edwards, John, Mfg. Co., The.	Paper	7	.....	140	.....	140	2	6	720
PORTERS MILLS, EAU CLAIRE CO.									
490 Porter's Mills	Planing Mill	1	.....	30	.....	30	1	2	206

PORT WASHINGTON, OZAUKEE CO.

491	Barth Bros. Mfg. Co.	Tables, etc.	2	45	45	1	1	70
492	Crystal Laundry	Laundry	1	1	2	1	1	hand
493	Gilson Mfg. Co., The	Machinist	2	70	70	1	1	45
494	Guenther, S. G., & Son	Brick and Tiles	1	5	5	1	1	40
495	Martin & Wester	Flows	1	3	3	1	1	15
496	Mueller, Chas. A.	Tunners	1	30	30	1	2	150
497	Port Washington Foundry Co.	Machinists	1	25	25	1	1	80
498	Port Washington Steam Laundry	Laundry	1	1	2	1	1	15
499	Schramke, John	Brick	1	6	6	1	1	40
500	Stelling, R.	Flour	1	5	5	1	1	100
501	Wisconsin Chair Co., The	Chairs	2	515	45	53	4	600
	Totals		12	6	715	48	14	1,155

PRAIRIE DU CHIEN, CRAWFORD CO.

502	Artesian Roller Mill	Flour and Feed	1	1	1	1	1	wat.
503	Benthin, Chas., Repair Shop	Machinery	1	1	1	1	1	16
504	Courier, The	Printing	1	4	4	1	1	hand
505	Gedney, J. P., Pickle Co.	Pickles	1	45	20	28	1	80
506	Hortshall, D. F.	Lumber	1	10	10	1	1	100
507	Prairie du Chien Button Co.	Buttons	1	75	75	1	1	50
508	Prairie du Chien Electric Light Co.	Supply Light	1	2	2	2	2	130
509	Prairie du Chien Mfg. Co.	Boxes, Barrels, etc.	1	16	15	6	1	35
510	Prairie du Chien News	Printing	1	4	4	4	1	gas
511	Prairie du Chien Steam Laundry	Laundry	1	2	2	1	1	3
512	Prairie du Chien Woolen Mills Co.	Blankets, etc.	2	20	24	1	1	100
513	Rienow, H., & Son	Boxes, etc.	1	6	6	1	1	40
514	Schumann & Meuges Brewing Co.	Brewers	1	6	1	7	2	75
	Totals		13	1	192	45	13	529

PRENTICE, PRICE CO.

515	Fox, C. J.	Staves	1	24	24	2	2	80
516	U. S. Leather Co.	Leather	1	63	63	4	4	400
517	Vandusen & Co., G. O.	Lumber	1	12	12	1	1	50
518	Vandusen & Co., G. O.	Lumber	1	22	22	2	2	120
	Totals		7	1	121	9	9	650

FACTORY INSPECTION — OTHER PLACES — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.			
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.	
RANDOLPH, DODGE CO.										
519 Jones, David G.	Elevator	1	.....	2	.....	2	.....	1	20
520 Nutting, C. A., Wagon Shop	Repairing	1	.....	3	.....	3	.....	1	gas
521 Randolph Canning Factory	Canning	3	.....	22	30	52	6	2	60
522 Randolph Roller Mill	Flour and Feed .....	.....	1	13	.....	13	.....	1	65
523 Randolph Wagon Works	Wagons	1	.....	12	.....	12	.....	1	40
Totals .....	.....	6	1	52	30	82	6	6	197
RED CLIFF, BAYFIELD CO.										
524 Red Cliff Lumber Co.	Lumber .....	.....	1	100	5	105	.....	3	330
REEDSBURG, SAUK CO.										
525 Reedsburg Brewery	Brewery	1	.....	4	.....	4	.....	1	50
526 Reedsburg Building & Lumber Co.	Interior Wood Work	1	.....	25	.....	25	.....	1	60
527 Reedsburg Canning Co.	Canning	3	.....	60	40	100	.....	2	30
528 Reedsburg Clothing Co.	Clothing	1	.....	5	20	25	.....	1	lad.
529 Reedsburg Electric Light & Water Co.	Light and Water	1	.....	5	.....	5	.....	1	wat.
530 Reedsburg Roller Mills	Grist Mill .....	.....	1	3	.....	3	.....	1	wat.
531 Reedsburg Woolen Mill Co.	Woolen Cloth .....	.....	1	48	77	125	1	2	wat.
532 Schoephoester, Wm.	Staves and Heading	1	.....	8	.....	8	.....	2	100
Totals .....	.....	8	2	153	137	295	1	9	505
RIB LAKE, TAYLOR CO.										
533 Hentz, F. J.	Lumber	1	.....	16	.....	16	.....	1	40

534	Kennedy, J. J.	Lumber	3	222	222	9	160
535	Shaw, Fayette	Leather	4	321	321	10	240
	Totals						
RICE LAKE, BARRON CO.							
536	Knapp, Stout & Co.	Flour	1	4	4		wat.
537	Knapp, Stout & Co.	Lumber	6	196	196	12	600
538	Mercer, C.	Lumber	1	15	15	1	50
539	Rice Lake Water Co.	Light and Water	1	3	3	2	140
	Totals		8	217	218	15	790
RICHLAND CENTER, RICHLAND CO.							
540	Fries, J. C.	Cooperage	1				
541	Hallels, J. B.	Marble Works	1	5	5	1	15
542	James, N. L.	Saw Mill	1	3	3		hand
543	Krauskop, A. H.	Lumber	2	10	10	1	idle
544	Parfrey, A. C.	Lumber	1	20	20	1	160
545	Parfrey, A. C.	Lumber	1	10	10		wat.
546	Republican Observer	Grist Mill	1	3	3		wat.
		Printing	1	3	3	1	10
547	Richland Center Water Works	Supply Water	1	1	1	2	130
548	Richland Democrat	Printing	1	2	2		wat.
549	Richland Rustic	Printing	1	2	2	1	8
550	Snow White Steam Laundry	Laundry	1	2	2	1	9
551	Strang, George H.	Electric Light	1	3	3	2	150
	Totals		12	64	64	11	472
RIPON, FOND DU LAC CO.							
552	Bonten & Germaln Co.	Gloves and Mittens	1	19	16		gas
553	Reins, H. J.	Pickles	1	15	15		
554	Ripon Knitting Works	Knit Goods	2	30	30	11	15
555	Ripon Packing Co.	Pickles	1	30	30	1	15
556	Ripon Underwear Co.	Underwear	1	3	9		gas
557	Ripon Veneer & Box Works	Boxes	1	16	12	1	70
558	Schaefer, W. E.	Foundry	1	8	8		gas
	Totals		8	120	125	11	135

FACTORY INSPECTION—OTHER PLACES—Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.
								Total horse power.
559 Roberts Creamery Co.	Butter	1	1	1	1	1	1	6
ROCK ELM, PIERCE CO.								
560 Birtell, Harry	Repairing	1	1	1	1	1	1	5
561 Churchill, F. B.	Lumber	1	1	13	13	13	2	65
562 Hammond Bros.	Lumber	1	1	15	15	15	1	50
563 Hawin, C. A. & Sons ..	Lumber	1	1	10	10	10	1	80
564 Warner & Co.	Lumber	1	1	15	15	15	1	40
565 Weber, John	Lumber	1	1	16	16	16	1	60
Totals .....	.....	6	6	70	70	70	1	280
ROZELLEVILLE, MARATHON CO.								
566 Rohrbach, Geo. Henry ..	Lumber	1	1	22	22	22	2	75
SAUK CITY, SAUK CO.								
567 Sauk City Canning & Packing Co.	Canning	3	3	45	80	125	10	80
SCHOFIELD, MARATHON CO.								
568 Brooks & Ross Lumber Co.	Lumber	2	1	160	160	160	4	380
SHAWANO, SHAWANO CO.								
569 Porter, A. K.	Planing Mill	1	1	3	3	3	1	40
570 Raigstad Brew. Co.	Brewery	1	1	6	6	6	1	100

FACTORY INSPECTION.

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FACTORY INSPECTION — OTHER PLACES — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.	
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.
								Total horse power.
STILES, OCONTO CO.								
597 Eldred Anson Co.	Lumber	2		12		12		3 220
STOUGHTON, DANE CO.								
598 Asbesters Sad Iron Co.	Sad Iron	1		35		35	2	1 20
599 Diamond Steam Laundry	Laundry	1		1	3	4		1 80
600 Mandt, T. G., Vehicle Co.	Wagons, etc.	6		125		125		1 85
601 Stoughton Mill Co.	Flour	2		6		6	8	2 500
602 Stoughton Wagon Co.	Wagons, etc.	5	1	140		140	4	2 300
Totals		13	3	307	3	310	6	4 315
STURGEON BAY, DOOR CO.								
603 Advocate, The	Printers	1		6	1	7		1 2
604 Alban, John H., Seed Co.	Seeds	1	1	8	52	60		1 5
605 Door County Democrat	Printers	1		2	1	3		1 5
606 Ives Bros.	Machine Shop	1		2		2		2 24
607 Pankratz, Geo., Lumber Co., The.	Lumber	1		100		100	1	6 800
608 Reynolds Preserving Co.	Canning Pens	1		142	43	185	10	3 135
609 Reicholdt & Wolter & Co.	Rents	1		50		50		1 60
610 Shaw, A., & Co.	Shingling	1	1	15		15		1 60
611 Sturgeon Bay Elec. Light Co.	Electric Light	1		3		3		3 365
612 Washburn, N. S.	Planing Mill	1		10		10		1 120
Totals		8	2	338	98	437	11	19 1,081

SUN PRAIRIE, DANE CO.								
613	Sun Prairie Canning Co.	Canning	3	38	52	90	4	1 60
TESS CORNERS, WAUKESHA CO.								
614	Silver Spring Creamery	Butter	1	1	1	1	1	20
THREE LAKES, ONEIDA CO.								
615	Woodruff & Maguire	Lumber	3	110	110	110	3	150
TIGERTON, SHAWANO CO.								
616	Tigerton Milling Co.	Lumber and Shingles	1	56	56	56	3	240
617	Wall & Spaulding Lumber Co.	Lumber and Shingles	2	50	50	50	2	140
	Totals		3	106	106	106	5	380
TOMAH, MONROE CO.								
618	C. M. & St. P. Ry Co.	Repair	1	73	73	75	2	160
619	Goodyear, C. A., Lumber Co.	Lumber	1	65	65	65	6	450
620	The Monitor	Printing	1	3	3	3	1	band
621	Tomah Electric Light Co.	Electric Light	1	2	2	2	1	band
622	Tomah Journal	Printing	1	3	3	4	1	band
623	Tomah Steam Laundry	Laundry	1	2	2	4	1	14
624	Tomah Water Works	Supply Water	1	2	2	2	1	17
	Totals		7	152	3	153	10	724
TOMAHAWK, LINCOLN CO.								
625	Ranger Lumber Co.	Lumber	2	30	30	30	3	300
626	Ranger Lumber Co.	Lumber	2	69	69	69	7	700
627	Ray Mill Co.	Lumber	2	65	65	65	4	600
628	Crane, H. B., Lumber Co.	Lumber	2	44	44	44	4	180
629	Tomahawk Iron Co.	Foundry	3	13	13	13	1	.....
	Totals		11	221	221	221	18	1,780

FACTORY INSPECTION—OTHER PLACES—Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYEES.		BOILERS.			
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.
STILES, OCONTO CO.									
597 Eldred Anson Co.	Lumber	2		12		12		3	230
STOUGHTON, DANE CO.									
598 Asbesters Sad Iron Co.	Sad Iron	1		35		35	2	1	30
599 Diamond Steam Laundry	Laundry	1		1	3	4		1	gas
600 Mandt T. G. Vehicle Co.	Wagons, etc.	6		128		128		1	gas
601 Stoughton Mill Co.	Flour	2		6		6		2	water
602 Stoughton Wagon Co.	Wagons, etc.	5		140		140	4	2	200
Totals		13	3	307	3	310	6	4	315
STURGEON BAY, DOOR CO.									
603 Advocate, The	Printers	1		6	1	7		1	2
604 Alban, John H., Seed Co.	Seeds	1		8	52	60		1	gas
605 Door County Democrat	Printers	1		2	1	3		1	5
606 Ives Bros.	Machine Shop	1		2		2		2	2
607 Fankratz, Geo., Lumber Co., The	Lumber	1		100		100	1	6	300
608 Reynolds Preserving Co.	Canning Peas	1		142	43	185	10	3	135
609 Reicholdt & Wolter & Co.	Boats	1		50		50		1	50
610 Shaw, A., & Co.	Shingles	1		15		15		1	80
611 Sturgeon Bay Elec. Light Co.	Electric Light	1		3		3		1	365
612 Washburn, N. S.	Planing Mill	1		10		10		1	120
Totals		8	2	338	99	437	11	19	1,081

SUN PRAIRIE, DANE CO.								
613	Sun Prairie Canning Co.	Canning	3	38	52	90	4	1 60
TESS CORNERS, WAUKESHA CO.								
614	Silver Spring Creamery	Butter	1	1	1	1	1	1 20
THREE LAKES, ONEIDA CO.								
615	Woodruff & Maguire	Lumber	3	110	110	110	3	3 150
TIGERTON, SHAWANO CO.								
616	Tigerton Milling Co.	Lumber and Shingles	1	56	56	56	3	3 240
617	Wall & Spaulding Lumber Co.	Lumber and Shingles	2	50	50	50	2	2 140
	Totals		3	106	106	106	5	5 380
TOMAH, MONROE CO.								
618	C. M. & St. P. Ry. Co.	Repair	1	75	75	75	2	2 160
619	Goodyear, C. A., Lumber Co.	Lumber	1	65	65	65	6	6 450
620	The Monitor	Printing	1	3	3	3	hand	hand
621	Tomah Electric Light Co.	Electric Light	1	3	3	3	hand	hand
622	Tomah Journal	Printing	1	3	3	3	hand	hand
623	Tomah Steam Laundry	Laundry	1	2	2	2	1	1 14
624	Tomah Water Works	Supply Water	1	2	2	2	1	1 15
	Totals		7	152	152	152	10	10 724
TOMAHAWK, LINCOLN CO.								
625	Ranger Lumber Co.	Lumber	2	30	30	30	2	2 300
626	Ranger Lumber Co.	Lumber	2	69	69	69	7	7 700
627	Ray Mill Co.	Lumber	2	63	63	63	4	4 600
628	Crane, H. B., Lumber Co.	Lumber	2	44	44	44	4	4 180
629	Tomahawk Iron Co.	Foundry	3	13	13	13	.....	.....
	Totals		11	221	221	221	18	18 1,780

FACTORY INSPECTION — OTHER PLACES — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS		EMPLOYEES.			BOILERS.			
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.	
TRAMWAY, DUNN CO.										
630 East Tramway Brick Yard.....	Brick	1		50		50		3	140	
TWO RIVERS, MANITOWOC CO.										
631 Aluminum Mfg. Co.	Aluminum Goods	2		74	27	101	3	2	120	gas
632 Chronicle, The	Printers	1		4	1	5			90	gas
633 Eggers, F., Veneer Seating Co., The	Veneer Seating		1	60		60		1	30	gas
634 Hamilton Mfg. Co.	Printers' Supplies	1	2	223	6	229	9	3	350	gas
635 Mueller Bros. Brewing Co., The	Brewers	1		6		6		1	30	gas
636 Two Rivers Mfg. Co.	Lumber		2	149		149		2	180	gas
Totals .....	.....	5	5	576	34	550	12	9	770	
VEEFKIND, CLARK CO.										
637 Veeckind Mfg. Co.	Staves and Heading	1		17		17	5	2	200	
VIROQUA, VERNON CO.										
638 Emmlson & Nelson	Flour and Feed	1		2		2		1	30	band
639 Larson Bros.	Marble Works	1		3		3			hand	band
640 Sing Kee Laundry	Laundry	1		3		3		1	10	gas
641 Solberg, Isaac	Wagons	2		4		4		4	30	gas
642 Vernon County Censor	Printing	1		4	1	5			band	band
643 Vernon County Leader	Printing	1		2		2			gas	gas
644 Viroqua Electric Light Co.	Electric Light	1		2		2			band	band

	Viroqua Republican Viroqua Water Works	Printing Supply Water	hand
Totals	10.....	24.....	3.....
WASHBURN, BAYFIELD CO.			
Bigelow, A. A. & Co.	2.....	500.....	171,000
Jacobs, John A.	2.....	94.....	2,140
Kendall & Lamoreaux	1.....	45.....	180
Northwestern Fuel Co.	1.....	50.....	160
South Shore Lumber Co.	1.....	175.....	5,200
South Shore Lumber Co.	1.....	15.....	50
Thompson Lumber Co.	1.....	180.....	180
Washburn Times	1.....	3.....	1 wat.
Washburn Pumping Station	1.....	1.....	2,240
Washburn Brewing Co.	1.....	4.....	15
Washburn Elevator Co.	1.....	19.....	2,700
Totals	11.....	3,1,086.....	2,1,088.....
WAUSAUKEE, MARINETTE CO.			
Bird & Wells Lumber Co.	3.....	80.....	80.....
WAUPUN.			
Althouse Wheeler Co., The	8.....	45.....	45.....
Automatic Wringer Co.	1.....	8.....	80
Caldwell, W. E.	1.....	2.....	1,20
Henry, Ira L., & Co.	2.....	14.....	57
Kohl, L. P.	1.....	2.....	4
Morris, J. S., Carriage Factory	1.....	17.....	17
Oison & Nelson Plow Factory	2.....	5.....	5
Shaler Hartgerink Co., The	1.....	25.....	25
Stone Mill	1.....	3.....	3
Waupun Steam Laundry	1.....	2.....	2
Wells, M. D., & Co.	2.....	359.....	359
Wells, M. D., & Co.	1.....	1.....	54
Zimmerman, F. F., Carriage Factory	2.....	23.....	23
Totals	23.....	1,506.....	1,506.....

FACTORY INSPECTION — OTHER PLACES — Continued.

NAME OF ESTABLISHMENT.	LOCATION AND BUSINESS.	BUILDINGS.		EMPLOYES.			BOILERS.			
		Under three stories in height.	3 or more stories in height.	Males.	Females.	Total.	Under 16 years.	Number.	Total horse power.	
WAVERLY, PIERCE CO.										
672	Beldenville Lumber Co.		3	75		75	2	3	170	
673	Glenwood Mfg. Co.	1		14		14		1	30	
	Totals	4		89		89	2	4	200	
WESTBY, VERNON CO.										
674	Thorson, Thos., & Co.	1		8		8		1	40	
WHITEWATER, WALWORTH CO.										
675	Empire Flouring Mill	1	1	5		5		1	wat	
676	Hawes & Co. Feed Mill		1	5		5		1	30	
677	Kilger's Brewery	1		6		6		1	25	
678	Merriam, I. Z.	1		2		2			gas	
679	Wegher & Son	2		13	1	14		1	20	
680	Whitewater Electric Light Co.	1		4		4		2	20	
681	Whitewater Steam Laundry	1		2	2	4		1	20	
682	Wisconsin Dairy Supply Co.	1		6		6				
	Totals	8	2	43	3	46		7	355	
WOODVILLE, ST. CROIX.										
683	Durrin, W. A., & Son	1		4		4		1	Idle	

OTHER PLACES.

Under this head are found the orders affecting the factories in other places, which have been issued and enforced by the factory inspectors during the years 1899 and 1900. The orders are classified as to the establishments affected, but the name of the establishment is replaced by its index number in the preceding table; that is, the same number that in the preceding table is found opposite the name of the respective establishments is here found opposite the orders which affect the same establishments.

Index No.	Orders Issued.
1	Swing doors out.
2	Affidavits; two story brick. Guard all exposed fly wheels, gears, shafting and set screws. One story frame. Guard large fly wheels and gears over water wheels also gears to fire pump and do not oil large shaft while running.
3	Swing doors out.
4	Swing doors out.
10	Swing doors out.
11	Discharged one boy under 14; ordered affidavit for one boy under 16 years.
12	Swing doors out.
13	Swing doors out.
14	Swing doors out.
15	Swing doors out; guard hole left in floor to carrier, 1st floor.
16	Affidavit ordered for boy under 16 years.
17	Swing doors out.
19	Swing doors out.
20	Swing doors out.
22	Guard two pulleys to trimmer; guard all set screws on shafting; box gear to back line shaft; guard fly wheel.
23	Guard set screws, also gear to trimmer.
24	Swing doors out; guard cog wheels to centrifugal reel; guard gears to bolting chests; guard all set screws to shafting.
25	Guard set screws.
26	Guard all set screws on shafting; guard connecting rod to engine, also gear to saw dust conveyor in engine room; repair hole on second floor. One story wood. Guard fly wheel to small engine in wood working shop.
27	Swing doors out.
29	Swing doors out; affidavits.
30	Swing doors out.
31	Swing doors out.
32	Swing doors out.
33	Swing doors out; guard governor balls on engine.
34	Swing doors out.
36	Swing doors out.
37	Swing doors out.
38	Guard fly wheel on engine and properly rail stairway from 1st floor to platform.
40	Guard front of planer; protect belts and drum shaft.
51	Swing doors out.
52	Swing doors out.
54	Swing doors out.
55	Swing doors out.
56	Swing doors out.
58	Swing doors out.
59	Swing doors out; provide suction device for emery wheels.
63	Guards and suction device on emery wheels.
65	Swing doors out.
66	Swing doors out.
67	Swing doors out.
68	Swing doors out.
69	Swing doors out.
70	Swing doors out; affidavit for one boy 15 years of age.
71	Swing doors out.
73	Swing doors out.
78	Place railing on stairs.

- 79 Place apron in front of planer to protect belts; hood emery wheels.
- 81 Swing doors out.
- 82 Swing doors out.
- 83 Swing doors out.
- 84 Swing doors out.
- 86 Swing doors out.
- 87 Swing doors out.
- 88 Swing doors out.
- 89 Swing doors out.
- 90 Swing doors out.
- 92 Guard band saw on bottom; guard emery wheels.
- 93 Swing doors out; rail around stairway on 2nd and 3rd floor; hand rails on stairs.
- 94 Swing doors out; guard emery wheels; guard set screws on all shafting, also put lift guard on 2nd and 3rd floor on elevator.
- 95 Swing doors out.
- 96 Swing doors out; guard emery wheels.
- 97 Guard band saw at bottom; guard emery wheel.
- 99 Swing doors out.
- 100 Swing doors out.
- 102 Swing doors out.
- 103 Swing doors out.
- 104 Swing doors out; guard fly wheel and pulley to punch and shear machine; provide clutch pulley to stop emery wheels and suction device for emery dust.
- 105 Swing doors out.
- 106 Swing doors out.
- 107 Swing doors out.
- 108 Swing doors out.
- 109 Swing doors out.
- 110 Swing doors out; guard large bevel gear to water wheel on 2nd floor place guard rail before water shaft and at ends of gear wheels, also guard drive wheels and belts to engine.
- 111 Swing doors out.
- 113 One story brick; fence fly wheel.
- 115 Swing doors out.
- 116 Swing doors out.
- 117 Swing doors out.
- 118 Affidavits; swing doors out; provide better closet facilities.
- 119 Swing doors out.
- 121 Affidavits for three boys, and keep record; swing doors out.
- 123 Swing doors out.
- 123 Swing doors out; fence fly wheel of engine, south end.
- 125 Place railing on stairs.
- 126 Guard belts, pulleys and drum on planer.
- 127 Swing doors out.
- 128 Affidavits; guard band saw on 2nd floor, on bottom; guard emery wheels.
- 129 Swing doors out.
- 131 Swing doors out.
- 133 Swing doors out.
- 134 Guard band saw on bottom; guard emery wheels.
- 136 Swing doors out.
- 137 Swing doors out.
- 138 Swing doors out.
- 139 Ordered affidavit for boy under 16 years.
- 140 Swing doors out.
- 142 Swing doors out.
- 143 Connection from engine room to factory; guard fly wheel.
- 145 Discharged two children under 14.
- 149 Swing doors out.
- 150 Swing doors out.
- 151 Swing doors out; guard fly wheel to engine.
- 152 Swing doors out.
- 154 Swing doors out.
- 155 Guard drive belt on feed mill, 1st floor; covers to three scuttle holes, 1st floor.
- 157 Affidavits; guard two crown gears in basement; fan in machine room.
- 159 Guard in running gear in 6th floor dressers below and the one above on the 3rd and 4th floor, also in running gear on screening reel and set screw on same; swing doors out.
- 160 Guard band saw on bottom; guard emery wheels.
- 161 Guard all set screws on all shafting; guard band saw on bottom; guard emery wheels.
- 162 Affidavits; swing doors out.
- 163 Swing doors out.
- 164 Swing doors out.
- 165 Swing doors out.
- 166 Swing doors out.
- 170 Swing doors out.
- 171 Swing doors out.
- 175 Cover coupling on shaft in planing mill, also one coupling on main shaft from engine in two buildings.

- 176 Affidavits; guard fly wheel in engine room; guard in running gear, venter machine; guard set screws on all shafting, also on nail keg machine; guard emery wheel.
- 178 Swing doors out.
- 179 Swing doors out.
- 180 Swing doors out.
- 181 Swing doors out.
- 182 Swing doors out.
- 183 Swing doors out.
- 184 Swing doors out.
- 187 Swing doors out; guard to drive belt on feed mill in basement.
- 188 Swing doors out.
- 190 Guard elevator shaft.
- 194 Guard pulley on lathe machine.
- 196 Guard main drive wheel on saw.
- 197 Hood pulleys on planer.
- 198 Swing doors out.
- 199 Swing doors out.
- 200 Swing doors out.
- 202 Guard fly wheel; guard drive belt to planer.
- 203 Affidavits; swing doors out; two story brick; guard elevator where broken off.
- 204 Swing doors out.
- 206 Swing doors out.
- 206 Swing doors out.
- 207 Affidavits; swing doors out.
- 208 Swing doors out.
- 209 Swing doors out.
- 210 Swing doors out.
- 211 Affidavits; guard fly wheel on engine; repair floor in planing room.
- 212 Hood cut off saw.
- 213 Guard fly wheel and main shaft; guard pulley on main shaft; box main shaft from rotary saw to edging saw table.
- 215 Swing doors out.
- 216 Railing around slitting saw; swing doors out.
- 217 Swing doors out; railing on stairway; guard fly wheel in engine room.
- 218 Swing doors out.
- 219 Affidavits and keep record of same.
- 221 Affidavits; swing doors out; two story frame; guard set screws on shafting; guard large gears to water power with gates and guard all exposed set screws and shafting.
- 222 Swing doors out.
- 223 Swing doors out.
- 225 Swing doors out; guard openings of stairs on 2nd and 3rd floors; guard elevator shaft on 2nd and 3rd floors.
- 226 Swing doors out.
- 227 Swing doors out.
- 228 Affidavits for four boys under 16; guard all exposed set screws, gears and belting and pulleys.
- 229 Swing doors out; box large line shafts and gears that run grinders and all
- 230 Swing doors out.
exposed gears, shafting and set screws.
- 231 Swing doors out.
- 232 Swing doors out.
- 233 Guard fly wheel and all set screws.
- 234 Swing doors out.
- 235 Swing doors out; guard fly wheel in engine room.
- 236 Swing doors out.
- 237 Suction device on emery wheels; swing doors out; proper communications between engine and machine room.
- 238 Swing doors out.
- 240 Swing doors out.
- 241 Swing doors out.
- 242 Swing doors out.
- 243 Swing doors out.
- 245 Swing doors out; affidavit for boy under 16 years; guard pulley and set screws at end of line shaft under working table, 2nd floor.
- 247 Swing doors out.
- 248 Swing doors out.
- 250 Cover all gearing on planing machine with iron hoods.
- 252 Procure affidavit and keep file of children under 16.
- 253 Swing doors out.
- 254 Swing doors out.
- 255 Swing doors out.
- 257 Swing doors out.
- 258 Swing doors out; railing on stairway.
- 259 Swing doors out.
- 261 Swing doors out; place railing on stairs.
- 262 Swing doors out; guard fly or drive wheel on engine and railing on stairs.
- 263 Swing doors out.
- 264 Affidavits; railings or doors at openings on 2nd and 3rd floors.
- 265 Swing doors out.

- 266 Swing doors out.
- 269 Affidavits; countersink set screws on shaft to blower also set screws on all shafting throughout, where exposed; guard clutch pulley and belt on line shaft in engine room; put wire screen in front of blower.
- 270 Swing doors out.
- 271 Swing door out; cap over key in shaft to fly wheel to Gofdon jobber press.
- 272 Swing doors out.
- 273 Swing doors out.
- 274 Swing doors out; guard drive belts and fly wheel on engine.
- 275 Swing doors out.
- 276 Swing doors out.
- 278 Swing doors out.
- 279 Swing doors out.
- 280 Swing doors out.
- 281 Swing doors out.
- 282 Swing doors out.
- 286 Swing doors out.
- 287 Swing doors out.
- 289 Swing doors out.
- 290 Swing doors out; box large belt where it comes through 1st floor and put gates on elevator at 2nd floor; two story brick; guard rail on stairs.
- 296 Swing doors out.
- 297 Swing doors out.
- 298 Swing doors out.
- 299 Swing doors out.
- 300 Affidavits; swing doors out.
- 301 Swing doors out.
- 302 Guard set screws on planer; guard band saw on 1st floor; swing doors out.
- 303 Swing doors out.
- 304 Swing doors out.
- 308 Guard belt and pulley to sticker; guard belts and pulley on double cut off saw also set screw on same, also guard belt and pulley on tenon machine; guard emery wheels; swing doors out; build platforms on both sides fire escape, 2nd and 3rd floor.
- 309 Dismiss children under 16 until affidavits procured and records of age kept; guard belt on planer, south side of east wing. Guard rail on stairs, center of west wing; file affidavits.
- 312 Swing doors out.
- 313 Swing doors out.
- 314 Swing doors out.
- 316 Swing doors out.
- 317 Swing doors out.
- 319 Hand rail on outside stairway; belt to trimmer boxed; cover all set screws; guard in running gears.
- 320 Swing doors out.
- 321 Swing doors out.
- 322 Swing doors out.
- 323 Swing doors out.
- 324 Swing doors out.
- 326 Swing doors out.
- 328 Guard fly wheel and balance wheel under saw mill, also end of shaft that drives log chain; end of shaft and pulley that drives the Edger box belt to trimmer; guard all set screws on shaft.
Two story wood. Guard fly wheel, main belt; connections from work room to factory; cover all set screws.
- 329 Connections from engine room to mill; cover all set screws; guard fly wheel, also main belt to edger and belt that drives trimmer.
- 330 Swing doors out.
- 331 Swing doors out.
- 334 Swing doors out.
- 338 Swing doors out.
- 339 Swing doors out.
- 340 Swing doors out.
- 341 Swing doors out.
- 342 Swing doors out; affidavits.
- 343 Swing doors out.
- 346 Swing doors out.
- 348 Swing doors out.
- 349 Swing doors out.
- 350 Swing doors out.
- 351 Swing doors out.
- 353 Swing doors out.
- 356 Swing doors out.
- 359 Swing doors out.
- 360 Swing doors out.
- 361 Guard fly wheel on engine.
- 362 Protect all machinery.
- 363 Protect planers by placing aprons in front, also belts and pulleys to be covered.
- 365 Swing doors out.
- 367 Swing doors out.
- 368 Swing doors out.
- 369 Swing doors out.

- 370 Swing doors out.
- 371 Swing doors out.
- 372 Swing doors out.
- 373 Swing doors out.
- 376 Swing doors out.
- 377 Swing doors out.
- 379 Swing doors out.
- 381 Swing doors out.
- 382 Swing doors out; guard emery wheels.
- 383 Swing doors out; guard emery wheel.
- 384 Swing doors out.
- 385 Swing doors out.
- 386 Swing doors out.
- 387 Swing doors out.
- 388 Swing doors out.
- 389 Swing doors out.
- 390 Swing doors out.
- 394 Guard standing drive belts to three planers and one band saw on planing mill floor.
- 395 File affidavits and keep record of all between 14 and 16 years. Keys on peeling machine.
- Swing doors out.
- 398 Swing door out; cut off key on fly wheel of engine or guard wheel.
- 399 Swing doors out; improve condition of emery room.
- 400 Swing doors out.
- 401 Swing doors out.
- 402 Swing doors out.
- 403 Swing doors out.
- Three story brick. Guard gear in machine room, north side, 1st floor; guard east side of elevator shaft, 1st floor; signal code to engineer.
- Three story brick (2). Guard open gears in machine room, east side, 2d floor.
- Two story brick. Communications from work room to engineer.
- 404 Swing doors out.
- 405 Swing doors out; guard two elevators; communications from workroom to engineer.
- 406 Swing doors out.
- 407 Swing doors out.
- 408 Swing doors out.
- 409 Guard coupling on main shaft, center of building.
- 410 Swing doors out.
- 411 Swing doors out.
- 413 Swing doors out.
- 414 Swing doors out.
- 415 Swing doors out.
- 416 Swing doors out.
- 417 Swing doors out.
- 418 Affidavit for one child under 16.
- 419 Swing doors out.
- 420 Swing doors out; remove or guard set screw on gear shaft and guard all exposed set screws and shafting.
- 423 Guard band saw on bottom; guard emery wheels; swing doors out.
- 424 Affidavits; guard emery wheels.
- 426 Affidavits; discharged one boy under 14; guard set screws on line shaft over head near east end of building, and change door in stairway to swing out.
- 427 Swing doors out.
- 430 Provide suction device and guard emery wheels; put engine room and boilers in good condition. Guard fly wheel to engine in planing mill.
- 432 Swing doors out.
- 434 Swing doors out.
- 436 Swing doors out.
- 438 Swing doors out.
- 440 Swing doors out.
- Two story wood. Guard belt running through floor; rail stairway; rail opening on 2d floor.
- 441 Swing doors out.
- 443 Guard drive wheels to engines and put railing on side of stairs leading to engine room. Swing doors out.
- 444 Rail main drive wheel on engine, on two sides.
- 446 Swing doors out.
- 447 Swing doors out.
- 448 Swing doors out. Proper signal between engineer and rooms with machinery.
- 449 Swing doors out.
- 451 Swing doors out.
- 452 Swing doors out.
- 453 Provide signal between mill and engine room.
- 454 Swing doors out.
- 455 Affidavits; guard main shaft.
- 456 Swing doors out.
- 457 Swing doors out.
- 459 Swing doors out.
- 460 Swing doors out.

- Guard fly wheel to engine.
- 461 Swing doors out.
- 464 Swing doors out.
- 466 Swing doors out.
- 467 Swing doors out.
- 468 Swing doors out.
- 469 Swing doors out.
- 471 Swing doors out.
- 473 Swing doors out; guard all exposed gears, set screws and shafting.
- 475 Guard in running gear on planer on 1st floor; also belts and pulleys on same, belt and pulley on sticker; guard three band saws on 2d floor; guard in running gear on sander on 2d floor, also in running gear on planer, 2d floor, also belt and pulley on same. Guard belts and pulleys on both shapers on 2d floor, also belts and pulleys on circular saw, 2d floor; guard all shafting and counter shafts.
- 476 Swing doors out.
- 477 Guard in running gear on sander, 2d floor; guard band saw on bottom. Guard belt and pulleys on shaper; guard pulley in basement, near sticker. Guard emery wheels.
- 478 Affidavits; swing doors out.
- 480 Swing doors out.
- 481 Swing doors out.
- 482 Swing doors out.
- 484 Affidavits for six children under 16 years; swing doors out.
- 485 Swing doors out.
- 486 Affidavits; swing doors out.
- 487 Swing doors out.
- 488 Swing doors out.
- 490 Swing doors out; affidavits for two boys under 16; signal bells.
- 491 Discharged one boy under 14 years; guard in running gear on planer, 1st floor, east side, also guard belt and pulley on cut off saw, 1st floor; guard all emery wheels; guard band saw on bottom; guard in running gear on sander on 2d floor.
- 493 Guard emery wheels; put in suction device for four emery wheels to carry away dust.
- 495 Guard emery wheels.
- 496 Swing doors out.
- 497 Guard fly wheel in engine room; guard emery wheels.
- 500 Swing doors out.
- 501 Guard all set screws on all shafting and counter shafting. Guard five band saws on 2d floor; guard seven emery wheels.
- 502 Swing doors out.
- 503 Swing doors out.
- 504 Swing doors out.
- 506 Provide permits; swing doors out.
- 507 Swing doors out; guard set screw on floor shaft.
- 508 Swing doors out.
- 509 Swing doors out.
- 510 Swing doors out.
- 511 Swing doors out.
- 512 Affidavits; swing doors out.
- 513 Swing doors out.
- 514 Swing doors out.
- 515 Guard fly wheel.
- 516 Guard couplings on shaft running from engine room to boiler house.
- 520 Swing doors out.
- 521 Guard rail for crank to piston on engine, in basement.
- 523 Guard counter shaft to shaping machine, 1st floor. Guard drive belt and fly wheel to engine, 1st floor.
- 524 Guard fly wheel in engine room.
- 525 Swing doors out.
- 528 Swing doors out.
- 529 Swing doors out.
- 530 Swing doors out.
- 531 Affidavits; swing doors out.
- 536 Swing doors out.
Four story wood. Hood on belt from main shaft running through floors, 2d and 3d.
- 539 Swing doors out.
- 540 Affidavits; swing doors out.
- 541 Swing doors out.
- 543 Affidavit for one boy.
- 544 Swing doors out.
- 545 Swing doors out.
- 546 Swing doors out.
- 547 Swing doors out.
- 548 Swing doors out.
- 549 Swing doors out.
- 550 Swing doors out.
- 551 Swing doors out.
- 559 Guard fly wheel to gasoline engine, 1st floor.
- 557 Suction device for band saw.
- 560 Swing doors out.

- 561 Guard pulley from main belt to saw.
- 562 Affidavits.
- 563 Cover pulley and edging saw openings.
- 564 Guard pulley drive on saw arbor.
- 566 Affidavits; guard large fly wheel and balance wheel, main belt in engine room, all set screws and pulleys.
- 567 Affidavits; discharged two children under 14; swing doors out.
- 570 Swing doors out; guard elevator shaft on all floors.
- 571 Swing doors out.
- 574 Affidavits; discharged children under 14 years. Box large drive pulley to wood chipper machine. Swing doors out.
- 576 Swing doors out.
- 577 Swing doors out.
- 578 Swing doors out.
- 579 Swing doors out.
- 584 Swing doors out.
- 586 Swing doors out.
- 586 Iron railing around engine; gearings, cogs and pulleys to be guarded; wheels and couplings on main shaft about center of building; openings in floor over washers; cog wheels of all machinery, running washers and all other dangerous places guarded; affidavits.
- 587 Guard saw on cutting bolt machine; railing around engine and main drive wheel.
- 588 Swing doors out.
- 589 Guard opening in floor through which elevator passes.
- 591 Guard front of planer by apron.
- 592 Swing doors out.
- 595 Swing doors out.
- 598 Swing doors out.
- 599 Swing doors out; guard fly wheels on gasoline engine.
- 600 Swing doors out.
- Two story frame. Rail on side of stairs.
- Two story frame. (Paint shop.) Rail on side of stairs.
- 601 Swing doors out.
- 602 Two story brick veneer. Guard elevator and put rail on side of both stairs. One story brick. Swing doors out.
- Two story frame. Guard rail around stair openings and one side of stairs.
- 603 Swing doors out.
- 604 Swing doors out.
- 606 Swing doors out.
- 606 Guard all set screws on all shafting on 1st floor; swing doors out.
- 607 Affidavits.
- 608 Swing doors out; guard on 2d floor around elevator; file affidavits; reduce working hours for minors to 10 hours.
- 611 Swing doors out.
- 612 Guard all set screws and pulleys on 1st floor, also all set screws on all shafting and machinery.
- 613 Affidavits; swing doors out; provide signal bells; guard set screws on shaft to capping machinery and guard elevator.
- 614 Swing doors out.
- 616 Guard belt to planer.
- 619 Suction device on band saw gummer and emery wheel.
- 621 Swing doors out.
- 622 Swing doors out.
- 623 Swing doors out.
- 624 Swing doors out.
- 630 Affidavits; box or cover long line shaft for hauling up clay cars; guard large belts and pulleys on countershaft of brick machine.
- 631 Swing doors out. Affidavits.
- 632 Swing doors out.
- 633 Affidavits; guard all belts and pulleys on all machines on 2d floor. Swing doors out. Speaking tubes; fire escape; discharge 2 children under age.
- 634 Affidavits; guard in running gear on sticker on 1st floor; guard belts and pulleys on tongue groover and jointer, also set screws on same; guard set screws on Invincible Sander, 2d floor; box belt and pulley on same; guard all emery wheels, with exception of knife grinder; swing doors out. Put bell in elevator well.
- Two story wood. Guard emery wheels; two fire escapes; discharged four boys under age.
- 635 Swing doors out.
- 636 Guard set screws on shafting on 1st floor. Swing doors out.
- Three story wood. Two fire escapes. Guard set screws on shafting on 1st floor; guard emery wheels; discharged 14 children under age.
- 637 Guard all set screws on shafting.
- 638 Swing doors out.
- 639 Swing doors out.
- 640 Swing doors out.
- 641 Swing doors out.
- 643 Swing doors out.
- 644 Swing doors out.
- 646 Swing doors out.
- 647 Guard coupling on main shaft entire length of mill; hood bolt heads.

- 648 Rail opening in floor, 2d floor. Guard in front of planer, belts, pulleys and shaft.
 649 File affidavits; railing around fly wheel in engine room.
 650 Swing doors out.
 654 Swing doors out.
 655 Swing doors out.
 656 Swing doors out.
 658 Provide suction device on emery wheels. Remove set screws from over head line shafting in basement.
 661 Swing doors out.
 662 Swing doors out.
 663 Swing doors out; guard fly wheel.
 664 Swing doors out.
 666 Swing doors out; bars to elevator shaft, each floor; rail at top of opening for stairs, also rail to stairs.
 668 Swing doors out.
 659 Swing doors out.
 660 Swing doors out.
 661 Swing doors out.
 662 Swing doors out.
 663 Swing doors out.
 664 Swing doors out.
 665 Swing doors out.
 667 Swing doors out.
 668 Swing doors out.
 669 Ventilate closets—conform to sec. 2, chapter 232, laws of Wisconsin. Swing doors out.
 671 Swing doors out.

SUMMARIES.

The following summaries show, for the factories in "other places," the number of each of the different classes of objects examined, the conditions of same, and the number of orders in each case, as reported by the inspectors during the period covered. A close study of these facts will reveal not only the nature and scope of our duties, but the conditions, as a whole, of the factories included with respect to the factory laws.

1 Establishments: Number inspected, 683.

2 When established: 5 years ago or less, 201; 10 years ago but more than 5, 143; 15 years ago but more than 10, 70; more than 15 years ago, 214.

3 Buildings: Number inspected, 1,052.

Kind and height.	1 story.	2 stories.	3 stories.	4 stories.	5 stories.	6 stories.	7 stories.	Totals.
Wood	292	305	53	6	1	1	.....	658
Brick	120	130	39	15	.....	.....	1	305
Stone	14	20	10	4	.....	.....	.....	48
Iron	17	13	6	1	3	.....	1	41
Totals	443	468	108	26	4	1	2	1,052

- 4 Hours of labor daily: Date of inspection, 33 firms, 12 hours; 33 firms, 11 hours; 57s firms, 10 hours; 12 firms, 9 hours; 14 firms, 8 hours.
- 5 Number of establishments in operation, 670; idle, 13.
- 6 Number employed: Male, 20,623; female, 2,197; total, 22,825; under 16 years, 480; under 14 years without permit, 22; with permit, 17.
- 7 Number of firms requiring night work of children, —; number of children effected by orders, 211.
- 8 Boilers: Total number, 834; number insured, 443; number of firms using steam for motive power, 463; electricity, 7; gas, 64; water, 33.
- 9 Persons employed on each floor: Basement, 300; first, 8,265; second, 4,217; third, 515; fourth, 70; fifth, —; sixth, —, seventh, —.
- 10 Fire escapes: Total number, 29; number in good or fair condition, 26; number of buildings three or four stories employing 2s persons or more not provided with escapes, 9; number of escapes ordered, 9.
- 11 Standpipes and automatic sprinklers: Number of buildings having outside standpipes, 75; inside, 180; number having hose connections, 24s; number of buildings provided with automatic sprinklers, 2s; number of orders, —; number of buildings connected with steam pump, 83; number of buildings connected with city hydrant, 61.
- 12 Stairways: Number between each floor, basement and first, 177; first and second, 88; second and third, 12s; third and fourth, 27; fourth and fifth, 6; fifth and sixth, 2.
Number of stairways enclosed, 233; outside stairway, 87; number of orders affecting stairs, 19.
- 13 Elevators: Number, 99; number with cables in fair or good condition, 59; number of automatic doors, 23; swinging, 15; sliding, 17; bars, 2s; number with different doors other than automatic on each floor, —; number operated by boy under 16 years, —; number of orders, 40.
- 14 Communication between work rooms and engineer: Number of buildings where connections are necessary, 362; number provided with the same, 326; number of each kind used: electricity, 100; tubes, 4; whistles, 204. Number of connections ordered, 27.
- 15 Machinery: Number of machines or parts of machinery in the various buildings affected by orders issued, 221; number of orders, 221.
- 16 Emery wheels: Number, 620; number in fair condition, 319; average speed, 1,450; number provided with guards, 50; suction devices, 4; number of guards and suction devices ordered, 247.
- 17 Hoists: Number, 56; number in good or fair condition, 35; orders affecting same, 21.
- 18 Vats, pans, etc.: Number, 237; number provided with safety guards, 182; guards not necessary, 55; number of orders issued affecting them, —.
- 19 Doors or exits: Basement, 129; number first floor, 3,383; number swinging in, 1,786; out, 67; both, —; slide, 799; number of buildings on which doors are fastened during working hours as not to permit of ready egress, —; number of orders affecting doors, 1,786.
- 20 Sanitary condition: Number of rooms poorly ventilated or overcrowded, —; number of rooms mechanically ventilated, 341; number of closets, 366; number of closets in fair or good condition, 2s9; number of orders affecting sanitary condition, 107.
- 21 Number of buildings in which explosives or inflammable compounds are kept, 75; orders issued, 1.
- 22 Number of buildings in which men and women are required to clean machinery while it is in motion, 1; orders affecting this, 1.
- 23 Number of buildings in which seats are provided for females, 235; number of orders affecting this, —.
- 24 Number of accidents, 38.
- 25 Number of buildings in which orders were issued, 484; total number of orders issued, 2,996.

The preceding presentations in this part relate to factories and workshops. The facts presented have been compiled of the reports of the inspection, and show, for each establishment inspected, the number of buildings occupied for manufacturing purposes; the number of persons employed, classified as to sex;

the number of boilers and amount of power used; and the number and nature of the orders issued. For each of the larger manufacturing centers in the state, and for the smaller places, as combined, is also found a kind of a summary of the inspections and of the orders issued. The data thus presented are of considerable importance. They show not only the employing capacity, the amount of power used, but the conditions under which work was carried on. In the two presentations which follow these facts for the state are summarized:

SUMMARIES.

Showing for each of the 29 larger manufacturing places in the state and for all other places combined, the number of establishments inspected, and the number of buildings occupied, the number of persons employed, the number of boilers and amount of power used by these establishments, as well as the total for all.

Index number.	NAME OF CITY.	Number of establishments.	BUILDINGS.		EMPLOYES.				BOILERS.	
			Under 3 stories in height.	3 or more stories in height.	Males.	Females.	Totals.	Under 16 years.	Number.	Total horse power.
1	Appleton	48	44	18	1,452	412	1,864	20	59	6,030
2	Ashland	21	41	6	79	20	709	2	67	5,790
3	Beloit	35	52	10	1,833	316	2,249	15	37	2,417
4	Chippewa Falls	14	37	8	629	51	680	8	13	1,100
5	Eau Claire	42	41	9	1,720	247	1,967	65	53	4,195
6	Fond du Lac	40	49	16	1,314	403	1,747	83	35	2,167
7	Green Bay	40	53	10	1,363	196	1,559	93	45	3,027
8	Janesville	41	29	20	1,072	456	1,528	50	37	2,323
9	Kaukauna	17	12	7	395	101	496	8	21	1,029
10	Kenosha	24	33	11	2,708	530	3,318	227	51	4,941
11	La Crosse	73	73	29	2,570	949	3,519	145	115	8,962
12	Madison	37	29	10	1,138	123	1,261	13	26	1,311
13	Manitowoc	29	24	5	922	65	987	20	37	2,423
14	Marinette	25	36	2	1,786	53	1,839	25	87	6,913
15	Marshfield	17	18	3	813	.....	813	32	20	1,985
16	Menasha	17	20	17	1,431	193	1,624	77	31	4,197
17	Menomonie	11	19	1	743	5	748	15	23	1,708
18	Merrill	13	16	3	1,334	4	1,338	92	42	3,870
19	Milwaukee	697	865	480	41,286	9,017	49,203	3,155	959	72,002
20	Oconto	14	27	2	82	74	897	26	31	3,192
21	Oshkosh	70	76	24	3,933	676	4,606	340	96	7,483
22	Racine	94	118	57	5,689	1,159	6,848	319	108	10,640
23	Rhineland	14	21	7	591	10	601	6	34	2,338
24	Sheboygan	54	62	48	4,701	368	5,069	466	81	7,889
25	Stevens Point	21	38	3	733	170	903	11	32	2,957
26	Superior	51	60	15	2,507	107	2,614	31	60	9,738
27	Watertown	27	24	12	445	105	550	12	32	1,673
28	Waukesha	17	27	3	588	69	657	19	27	4,329
29	Wausau	24	24	3	1,536	12	1,548	118	47	4,329
30	Other Places	683	911	141	20,628	2,197	22,825	495	334	38,462
	Totals	2,319	2,886	930	107,629	17,088	124,717	5,996	3,639	248,442

The above summaries relate to the places, establishments and buildings inspected, the persons employed, and the boilers used. As to the places inspected we find that 29 are given separately, and that all other places, are included under "Other Places." In all, about 175 manufacturing places in the state were visited and inspected from time to time between June, 1899, and September, 1890, or the period covered in this part.

The establishments inspected number 2,319. Of these 697, or about 30 per cent. were in Milwaukee; 939, or 40.5 per cent. were in 28 of the other larger places; and 683, or 29.5 per cent., in "other places" in the state.

In all, 3,866 buildings used for manufacturing purposes were inspected. Of these, 2,886, or 74.7 per cent., were less than three stories in height, and 980, or 25.3 per cent. were three stories or more in height. Of all the buildings included, 1,345, or 24.8 per cent., were in Milwaukee.

The establishments thus inspected employed 124,717 persons. Of these 90,541, or 72.6 per cent., were males, and 17,088, or 27.4 per cent. were females. Those who were under sixteen years of age numbered 5,996, or 4.8 per cent.

In point of persons employed as well as in every other respect Milwaukee occupies the first place. Thus we see that the number for that city is 49,203, or practically 40 per cent. of the total for the state. Of those thus employed in Milwaukee, 83.7 per cent. were males and 16.3 per cent. were females, while 6.4 per cent. were under 16 years of age.

Of the total number of persons, or children who were under 16 years of age 52.6 per cent. were found in Milwaukee. In other words, out of the 5,996 children under this age for the state, 3,155 were employed in the above city.

We also find from the above summaries that 3,059 boilers with 248,442 horse power were used by the establishments inspected. This is an average of about 81 horse power to each boiler. In this respect also Milwaukee leads with over 28 per cent. of the boilers, and 29 per cent. of the horse power for the state.

The following summaries show, for the state, the number, nature and condition of the objects inspected, and the number and nature of the orders issued.

Establishments Inspected.—As seen above, 2,319 manufacturing establishments were inspected from time to time, during the period covered in this part, or from June, 1899, to October, 1900. Of these establishments 2,281 were in operation at the time when full reports were made, and 38 were idle. Each plant gave the date when established, and from this the following facts were compiled:

When Established.	No. Establishments.
5 years ago or less	615
10 years ago but more than 5	506
15 years ago but more than 10	352
More than 15 years ago	846
Totals	2,319

We see from this that more than one-half of the establishments were established 10 years ago or more. By date of establishment is here meant the data when the present management took charge, not the data when plant was created.

Buildings Inspected: The reports show that 3,866 building were inspected in detail. These buildings have been classified according to material of which constructed and height. The result of this classification appears in the following table.

Kind and Height.	1 Story.	2 St'ries.	3 St'ries.	4 St'ries.	5 St'ries.	6 St'ries.	7 St'ries.	8 St'ries.	9 St'ries.	Totals.
Wood...	725	813	156	34	8	1	4	3	.....	1,744
Brick..	551	53	329	168	81	53	27	3	5	1,510
Stone...	32	44	36	8	3	.....	3	.....	.....	126
Iron....	63	55	23	14	9	1	3	3	10	196
Totals	1,371	1,505	549	224	101	55	37	9	15	3,866

In the classification as to height the two story building shows the greatest number, or 1,505. Next in number is the one story building in point of number is the third in order. From this point up there is a rapid decrease in the number of buildings of the different heights.

In the classification as to kind of building or material of which constructed, it is found that more buildings are made of brick and wood than of any other material. Thus, those con-

structed of brick number 1,810; those of wood 1,744; those of stone, 126, those of Iron 186.

The buildings thus inspected do not constitute all the buildings used by the establishments in question. Owing to pressure of work, the inspection was limited to buildings in which manufacturing was actually carried on. Warehouses and buildings where inspection was thought less needed were passed by, and not included in the above number.

Hours of Labor: The summaries under this head shows the number of the establishments in each case which were in operation a specified number of hours each day:

Number of Establishments.	Hours Daily.
46	8
1	8.5
90	9
25	9.5
1,945	10
46	11
118	12
38	Idle
Total....2,319	

These figures point to the fact that 10 house constitute a day's work in this state in by far the greater number of the establishments. Of the 2,271 plants in operation when the report was made, 1,945, or 85.6 adhered to the ten-hour day.

Persons employed: The establishments included here employed 124,717 persons, of whom 107,629 were male, 17,088 were female and 5,996 under 16 years of age. Of those under 16 years 1,096 were under 14 years, and of these only 257 had the requisite permit.

Classified as the floor or part of the building where these persons were employed at the time of inspection we have the following result:

Place of work.	No. of persons.
Basement	3,665
First floor	56,764
Second floor	27,933
Third floor	10,062
Fourth floor	3,677
Fifth floor	1,306
Sixth floor	463
Other floor	285
Other places	20,562
Totals	124,717

Here we find the number of persons on each floor from the basement to the sixth. Those above the sixth floor are classified as "other floors;" and those who were employed on no particular floor but rather anywhere where needed are grouped under "Other Places." In the basements 3,665 persons were employed. On the first floor 56,764 persons. This is the highest number. The second floor shows 27,933, or less than one-half as many as on the first. From the first the persons gradually decrease in number as each floor above it is reached. Those classed in no particular place numbered 20,562.

There were as said 5,996 children under sixteen years of age. All of these were effected by the law which went into effect in 1899 and consequently by the orders.

Boilers, etc.: Steam is the common motive power in the large proportion of all factories. Electricity is slowly gaining ground and Gas or Gasoline are used in the smaller shops, but steam has not been displaced to any considerable extent. Water power is also used, though not very extensively. Of the boilers used for generating steam a careful count was made, and they were found to number 3,059. Of this number 1,936, or about 63 per cent. were insured and inspected. This would seem to indicate that about 37 per cent. of the Boilers used in connection with manufacturing are uninspected.

The number of establishments in each case which used Steam, Electricity, Gas, or Water for motive power are given below :

Power used.	No. establishments.
Steam	1,792
Electricity	170
Gas or gasoline	157
Water power	97
No power	103
Totals	2,319

From the above figures it appears that 1792, or about 77 per cent. of all the establishment included, used steam power. Electricity is the next in order of importance, while Gas is third. Water power is not used by a very large percentage, but those using it are usually large in point of productive and employing capacity. Thus the greater proposition of all paper and pulp mills in the state are driven by water.

Fire escapes, standpipes, etc.: The law requires that all factories and workshops three or more stories in height in which 25 or more persons are employed shall be provided with fire escapes and standpipes. Of the factories inspected 692 came within this law, and of these only 600 were provided with the necessary escape. Orders to erect fire escapes on 92 buildings were therefore issued and enforced.

Many buildings on which there were no fire escapes, were fixed up with standpipes and hose connections. In all, 1,266 buildings were so equipped; and of these 323 also had automatic sprinklers.

Of the 600 fire escapes which were found only 414 were in good, or the best condition. Those in anyway defective were ordered repaired.

Stairway, etc.: Under the factory laws stairways must be kept in a safe condition. All stairways were therefore inspected. The following statement shows the number of stairways inspected.

Between basement and first floor	905
Between first and second floor	2,386
Between second and third floor	996
Between third and fourth floor	440
Between fourth and fifth floor	208
Between other floors	96
Total	5,031

The number of inside stairways examined was 5,031. In addition to this 572 outside stairways were also looked after, making the total number 5,603. Of these 1,784 stairways were enclosed. All but 106 were in good or fair condition, and, for the repairs of these orders were issued.

Elevators, Hoists, etc.: These are also within the inspection laws and were therefore examined. Of the 961 elevators inspected, 719 were in good or fair condition. The 242 which in one way or another were not up to the standard were ordered improved.

As to the kind of doors used on the elevators it was found that 199 elevators had automatic doors; 97 swing doors; 167 sliding doors; 463 elevators had bars or other means for closing.

Of the 370 hoists inspected 242 were in good or fair condi-

tion. The number for which orders had to be issued was thus 128.

Communication or signals between engineer and workrooms: Such signals required by law. A close investigation regarding them was therefore made. Of the whole number of establishments inspected such signals were required of 1,437. Of these only 1,230 were in compliance with the law, while 207 were in violation of it. Those in violation of the law were ordered to provide proper signals without delay.

Of the 1,230 signals in use 753 consisted of electric bells; 53 of speaking tubes; and 424 of steam whistles. Of the establishments lacking signals, however, 41 had clutch pulleys for stopping or reversing machinery in case of accident. This arrangement is nearly if not quite as effective as signals, or the communications required by law.

Machinery: The laws requiring guards on dangerous machinery were strictly enforced. To enumerate the different machines, or parts of machinery, which received and required attention would take too much space, even if it could be done. Machinery varies with the industry. In some cases the whole of one machine is dangerous and should be protected, in other cases only a small part of it comes within the law. In all 1,820 orders for guarding machinery were issued. Many of these orders, however, covered several different and separate parts, and therefore cover several times as many dangerous places as the actual number of the orders.

Emery wheels: In all 2,748 emery wheels were inspected. Of these 192 were provided with guards, and 86 with suction devices. The average speed of each 1,450 revolutions per minute. Only 879 wheels were in first class condition. The guards and suction devices ordered numbered 1,591. The law relating to emery wheels has been very strictly enforced.

Vats, pans, etc.: About 5,261 vats, pans or structures of this nature from which danger may arise were inspected. Of these 2,040 were safely protected, while 3,003 either did not need or could not be protected. Those requiring guards thus, numbered 218, and on these protection of a suitable nature was ordered.

Doors, exits: About 12,908 doors, or exits from buildings were inspected. Of these 5,322 swing out or were sliding, leaving 7,576 which swung in contrary to law. Orders to have these swing out were, of course, issued.

Sanitary condition: This term in the law is somewhat indefinite. It is often difficult to determine what really constitutes bad sanitary condition. Poor ventilation, overcrowding, bad condition of water closets come within this term. About 1,286 workrooms where mechanical ventilation was needed were found. We also discovered 18 rooms that were badly overcrowded, and 645 closets that were in bad condition. In all 663 establishments were ordered to remedy conditions such as those described here.

Miscellaneous: Of the buildings inspected, 218 were found in which explosives were kept. As conditions of this kind are not regulated by law, no specific orders could be made.

Seats for female employes as required by law were provided by 989 establishments, and 32 others were required to do so. The seats thus found were largely provided during 1899 in obedience to the law of that year requiring such seats.

The accidents reported during 1899 numbered 397. These, however, did not, by far, include all the accident which occurred during the year. Owing to the fact that the law does not require employes to report accidents, a complete record of same is out of the question. Correct information of this nature is seldom voluntarily given.

Orders: The following orders effecting factories and workshops, as classified here, were thus issued and enforced.

Employment of children	5,996
New fire escapes	92
Defective fire escapes to be repaired	186
Stairways	106
Elevators	242
Holsts	128
Signals between engineer and work room	207
Machinery	1,820
Emery wheels	1,591
Vats, pans, etc.	218
Doors, exits	7,576
Sanitary condition	663
Seats for females	1,021
Totals	19,878

The orders thus issued are thus not only many an actual number but cover a wide range of conditions. Even a most casual study of them will show that the safety of the workers is closely guarded. Not only are children prevented from becoming wage earners during the age which ought to be devoted to the development of both their minds and their bodies, but every precaution is taken to prevent accidents and injurious conditions to the adults. The state is interested in intelligent and healthy citizens and to this end is constantly enacting and enforcing protective laws. The progress in this respect during the last few years has been little less than remarkable.

As the above exhibit shows, 19,878 orders were actually issued during the period covered. The greater number of these affected children, doors, etc. Thus we see that those effecting children numbered 5,996, and that those effecting doors footed up to 7,576. The remaining orders are divided among other violations. While many orders were thus issued, the number of objects effected is still greater. The reason for this is that each order effecting machinery of all kinds, the sanitary condition, etc., generally called for several changes or improvements. In this way the improvements called for often exceed the orders in number. The above exhibit conveys a fairly good idea, not only of what has been done during the present term in the way of enforcing the factory laws in this state, but it also indicates the scope of these laws. That all this work has resulted in some good will hardly be questioned.

TABLE I.—CIGAR FACTORIES—MILWAUKEE.

NAME.	ADDRESS.	Index No.	PERSONS EMPLOYED AT DATE OF INSPECTION.			No. between 16 and 18 years.	No. between 14 and 16 years.	No. under 14 years.
			Males.	Females.	Totals.			
Ackerman, R	522—5th Ave	1	1		1			
Arocena, J. & Co	445 E. Water St.	2	4	1	5			
Artz, Jac. J.	534—14th St.	3	1		1			
Baumbach, Aug. W.	1223—12th St.	4	1		1			
Bayer, A. A.	838 Grove St.	5	1		1			
Beaty, Reuben	229 Reed St.	6	1	1	2			
Behling, Fred	936—16th St.	7	1		1			
Bejsovic, Joseph	736—14th St.	8	1		1			
Beland, M.	1305—12th St.	9	7	1	8		1	1
Benz, George	752—9th St.	10	4		4		1	
Bernauer, William	1028 Walnut St.	11	1		1			
Berndt, C.	212—4th St.	12	7		7		1	
Bestian, Gustav	882—7th St.	13	1		1			
Beulke, Herman	901—12th St.	14	1		1			
Beumle, B.	1522 Cherry St.	15	10	2	12			
Beverung, Charles	609—2d St.	16	4		4			
Biersach, C.	Cor. 10th & Prairie.	17	6		6			
Blunk, William	1307 Fond du Lac av.	18	4		4			
Boehlein, John	661—14th St.	19	1		1			
Boehm, F.	494 Mitchell St.	20	1		1			
Boetcher, P.	717—10th St.	21	1		1			
Borger, John	646—11th Ave.	22	3		3			
Brockaw, H.	Green Bay Road	23	1		1			
Broncle & Co.	2405 Chestnut St.	24	5		5		1	1
Bretthauer, Henry	Blue Mound Road	25	1		1			
Buech, H. W.	822 Kinnic Ave.	26	2	1	3			
Bunn, Harvey	583—2d St.	27	1		1			
Cassell, Ed	536—11th St.	28	1		1			
Christiansen, J. I.	1807 Walnut St.	29	1		1			
Deeg, August	371—3d St.	30	10		10		2	
Dewitz, Wm.	712—12th St.	31	1		1			
Dickerhoff, Theo.	599 Grove St.	32	1		1			
Dietz, Frank J.	418 Harmon St.	33	1		1			
Dipple, Chas.	720 Walnut St.	34	1		1			
Doctor, C. M.	499 Madison St.	35	1		1			
Doctor, P. L.	1032 Teutonia Ave.	36	1		1			
Dreher, Fred	108 North St.	37	2		2			
Duehring, Frederick	349—12th St.	38	1		1			
Dunker, Herman	731—7th St.	39	1		1			
Eagle Cigar Factory	704 Germania St.	40	2	1	3			
Eckhardt, Julius E	664—15th St.	41	1		1			
Ehlert, Frank	2439 Lloyd St.	42	1		1			
Fandrew, Wm.	550—10th St.	43	1		1			
Felsecker, Jas. J.	132 Walnut St.	44	1		1			
Felsecker, V. B.	625—20th St.	45	1		1			
Felten, F. G.	3105 Mt. Vernon Ave.	46	9	1	10		1	
Fernandez, Bernardo	487 Broadway	47	9	3	12			2
Fiebrantz, Fred	419½ Grand Ave.	48	1		1			
Fiedler, Otto	262—4th St.	49	1		1			
Fischedick, H. F.	151 Reed St.	50	2	1	3			
Total for 50 establishments			123	12	135	7	4	

TABLE I.—CIGAR FACTORIES—MILWAUKEE.—Continued.

NAME.	ADDRESS.	Index No.	PERSONS EMPLOYED AT DATE OF INSPECTION.			No. between 16 and 18 years.	No. between 14 and 16 years.	No. under 14 years.
			Males.	Females.	Totals.			
Flandenmeyer, P.	422 Center St.	51	1		1			
Fleischmann, Chas.	2452 Fond du Lac Av	52	5		5	1		
Frank, M.	682 Scott St.	53	1		1			
Frantz, Emil.	735—12th St.	54	1		1			
Friedrich, H. F.	1107 Island Ave.	55	1		1			
Freitsche, Joseph.	1021 Galena St.	56	1		1			
Froenming, D. J.	Meinecke & 21st St.	57	2		2			
Frobbach, A.	213—15th St.	58	14	3	17			
Fuerkert, H. F.	1014 Weil St.	59	1		1			
Garcia, A.	453 E. Water St.	60	1		1			
George, Emil H.	991—7th St.	61	1		1			
Gerus, Isador.	734 Germania St.	62	1		1			
Gierm-schird, G.	100 Ferry St.	63	3		3			
Goebel, P.	55 Oneida St.	64	9		9		1	
Goldstein, A.	314 State St.	65	4		4			
Goll, William.	17074 F'd du Lac Av	66	1		1			
Grapp, Wm.	837—3rd St.	67	1		1			
Grabner, Emil.	1308—25th St.	68	1	1	2			
Graf & Bauerlein.	417-425—7th St.	69	89	135	223	14	27	
Grapp, August.	1204—12th St.	70	1		1			
Guenther, Otto.	732—5th St.	71	1		1			
Guetzlaff, Robert.	128 Oneida St.	72	1		1			
Haase, Herman.	1142—24th St.	73	2		2			
Haefel, Franz.	988—21st St.	74	1		1			
Haerther, F.	201 Vlier St.	75	1		1			
Hahn, Fred.	189—5th St.	76	2	1	3			1
Hahn, Jacob.	827—20th St.	77	1		1			
Hahn, R.	573 Clinton St.	78	7		7	1		
Hametner, John.	494—19th St.	79	1		1			
Harper, Adolph.	318 Garfield Ave.	80	1		1			
Harris, Max.	Cor. Ferry & S. W. St.	81	1		1			
Hassert, John.	1006—25th St.	82	1		1			
Heiber, Felix.	451 E. Water St.	83	1		1			
Heibold, Peter.	823—9th St.	84	2	1	3			
Heicher, Jacob.	Watertown Road.	85	1		1			
Heim, John.	Cor. Forst Hme & 11th	86	2		2			
Heitmann, Wm.	861 National Ave.	87	2		2			
Heller, Jos.	1061—8th St.	88	1		1			
Hellmuth, Chas. F.	1010 Central St.	89	1		1			
Henges, Peter L.	422—12th St.	90	1		1			
Henner, H.	417—9th St.	91	1		1			
Hermann, B.	203 Grand Ave.	92	2		2			
Herman, D.	529 Grand Ave.	93	1		1			
Hermann, H. & C.	762—3rd St.	94	5		5		1	
Herrick, Joseph.	708—13th St.	95	3		3	1		
Hitz, George.	379—5th St.	96	1		1			
Hochstein, Phil H.	883—1st St.	97	2		2			
Hoffmeister, Wm.	Cor. 2nd & Grand Ave.	98	2		2			
Hoffer, A.	1007—24th St.	99	2		2			
Hoffmann, Jac.	891—8th St.	100	2		2			
Total for 50 establishments			190	141	331	17	29	5

TABLE I.—CIGAR FACTORIES—MILWAUKEE.—Continued.

NAME.	ADDRESS.	Index No.	PERSONS EMPLOYED AT DATE OF INSPECTION.			No. between 16 and 18 years.	No. between 14 and 16 years.	No under 14 years.
			Males.	Females.	Totals.			
Holzheuser, Wm.....	607—3rd St.....	101	1	.....	1	.....	.....	.....
Huber, Carl.....	1234—3rd St.....	102	1	.....	1	.....	.....	.....
Hunger, M.....	416—5th St.....	103	1	.....	1	.....	.....	.....
Huntemann, Wm.....	943—8th St.....	104	1	.....	1	.....	.....	.....
Jaworski, F.....	715—5th St.....	105	1	.....	1	.....	.....	.....
Jaworski, J.....	1519 Lloyd St.....	106	1	1	2	.....	.....	.....
Jendziewski, Frank.....	895 Mitchell St.....	107	1	.....	1	.....	.....	.....
Kass, Jas.....	2146 Galena St.....	108	1	.....	1	.....	.....	.....
Kaiser, A.....	902 Vliet St.....	109	1	.....	1	.....	.....	.....
Kehres, George.....	2362 Fond du Lac Ave	110	1	.....	1	.....	.....	.....
Keifer, F.....	1922 Meinecke Ave....	111	1	.....	1	.....	.....	.....
Kelbe, Wm.....	655 Superior St.....	112	1	.....	1	.....	.....	.....
Kerns, Eva.....	491 Cherry St.....	113	3	.....	3	.....	1	1
Kerns, J.....	534—9th St.....	114	4	.....	4	.....	2	.....
Kimmer, Chas.....	945 Teutonia Ave....	115	2	.....	2	.....	.....	.....
Klabomde, E.....	877—21st St.....	116	1	1	2	.....	.....	.....
Klatt, R. W.....	908—Kinickinnic Ave	117	2	.....	2	.....	.....	.....
Kleist, John.....	Green Bay Road.....	118	3	.....	3	.....	.....	.....
Klenk, Emil.....	Wauwatosa St.....	119	1	.....	1	.....	.....	.....
Klinkert, J.....	1207 Vliet St.....	120	2	.....	2	.....	.....	.....
Koch Cigar Co.....	532—6th St.....	121	3	1	4	1	.....	.....
Kohn, Julius.....	164 Lee St.....	122	1	.....	1	.....	.....	.....
Kosack, Wm.....	1075—20th St.....	123	1	.....	1	.....	.....	.....
Kuehne, August.....	231 Howell Ave.....	124	1	.....	1	.....	.....	.....
Kukla, F.....	483—10th St.....	125	3	.....	3	.....	.....	.....
Laeisch, Peter.....	408—4th St.....	126	1	.....	1	.....	.....	.....
Langenbeinrich, Paul.....	998—15th St.....	127	1	.....	1	.....	.....	.....
Laseck, B.....	Pt. Washington Road	128	1	1	2	.....	.....	.....
Lee, Oslan F.....	East Milwaukee.....	129	1	.....	1	.....	.....	.....
Lembke, Frank C.....	1429—9th St.....	130	1	.....	1	.....	.....	.....
Lepsch, Chas.....	820 Germania St.....	131	1	.....	1	.....	.....	.....
Liar, George.....	460—13th St.....	132	1	.....	1	.....	.....	.....
Liebermann, Robert.....	1390—3rd St.....	133	1	.....	1	.....	.....	.....
Liebschewsky, Abraham.....	453—3rd St.....	134	1	.....	1	.....	.....	.....
Lippert, Adolph.....	533—3rd St.....	135	1	.....	1	.....	.....	.....
Lippert, Fred.....	652—18th St.....	136	1	.....	1	.....	.....	.....
Lippert, H. L.....	815—19th St.....	137	1	.....	1	.....	.....	.....
Loose, H.....	459—31st St.....	138	1	.....	1	.....	.....	.....
Luell, George.....	667 Greenfield Ave....	139	5	.....	5	.....	.....	.....
Lugner, Otto.....	810—17th St.....	140	1	.....	1	.....	.....	.....
Lynch, Jas. J.....	105—11th St.....	141	3	1	4	.....	.....	.....
Mahnke, Theo.....	Pt. Washington Road	142	1	.....	1	.....	.....	.....
Manning, D. J.....	447 Mitchell St.....	143	1	.....	1	.....	.....	.....
Marcus, Stanislaus.....	69—12th St.....	144	4	.....	4	.....	.....	.....
Massbauer, J.....	623—10th St.....	145	3	1	4	.....	.....	.....
Mathias, John.....	836 Buffum St.....	146	1	.....	1	.....	.....	.....
McLaughlin, James G.....	432—3rd St.....	147	1	.....	1	.....	.....	.....
Meissner, E.....	719—13th St.....	148	1	.....	1	.....	.....	.....
Mews, Charles.....	1231 Center St.....	149	1	.....	1	.....	.....	.....
Meyer, Anton.....	1909 Wright St.....	150	1	.....	1	.....	.....	.....
Total for 50 establishments.....			75	6	81	1	3	1

TABLE I.—CIGAR FACTORIES—MILWAUKEE.—Continued.

NAME.	ADDRESS.	Index No.	PERSONS EMPLOYED AT DATE OF INSPECTION.			No. between 16 and 18 years.	No. between 14 and 16 years.	No. under 14 years.
			Males.	Females.	Totals.			
Miller, Wm P.....	442 National Ave.....	151	4	1	5			
Milwaukee Cigar Co.....	907—1st St.....	152	1		1			
Machile George.....	951—14th St.....	153	1		1			
Moehring, Henry.....	340 Grove St.....	154	1		1			
Mueller, Henry.....	470—24th St.....	155	1		1			
Mueller, Jacob.....	803—19th St.....	155	1		1			
Mueller, J. A.....	419 Chestnut St.....	157	2		2			
Neidhoefer, L.....	917—18th St.....	158	1		1			
Neidner, H. A.....	851—5th St.....	159	1		1			
Neustadt Cigar Co.....	228—27th St.....	160	1		1			
Neuzuling, J.....	632—5th St.....	161	1		1			
Nevenstoecklin, Jacob.....	723 Hadley St.....	162	1		1			
Notbush, Henry.....	1006—20th St.....	163	1		1			
Oberwetter, G.....	1840 Cold Spring Ave.....	164	1		1			
Olsen, Carl M.....	231 Grove St.....	165	1		1			
Pagenkop, Henry.....	1492—7th St.....	166	1		1			
Peiloff, John J.....	533—20th Ave.....	167	1		1			
Pelt, Math.....	507 National Ave.....	168	4		4			
Pepper, Henry.....	139 Green Bay Ave.....	169	1		1			
Pfeifer, John.....	552—25 Ave.....	170	2		2			
Pfeifer, Wm.....	731 Germania St.....	171	1		1			
Pfeiffer, F. W.....	283—3d St.....	172	3		3	1		
Ponick, Hermann.....	707 Hadley St.....	173	1		1			
Preval, John L.....	869—3d St.....	174	1		1			
Priebe, A.....	1230 Vliet St.....	175	1		1			
Puttler Bros. Co.....	423 E Water St.....	176	2	1	3			
Rasch, Jacob.....	467—22d St.....	177	1		1			
Ratoczyski, Nick.....	975 Forest Home Ave.....	178	1	1	2	1		
Ranch, H.....	1061—3d St.....	179	1		1			
Raub, Frank A.....	429—13th Ave.....	180	3		3	1		
Richard, William.....	Town Granville.....	181	1		1			
Retzlaff, O. F.....	211 Logan Ave.....	182	3	1	4			
Reuter, Andrew.....	755 Beecher St.....	183	2		2			
Richter, George P.....	871 Lee St.....	184	1		1			
Rickert, Frank.....	618—21st St.....	185	1		1			
Riemer, Louis.....	485—14th St.....	186	7	1	8		1	
Riesch, J.....	937 Kinnic Ave.....	187	3		3			
Ripchen, H. J.....	551 Union St.....	188	1		1			
Shabart, Joseph.....	1815 Lloyd St.....	189	1	1	2			
Schaefer, John L.....	821 Winnebago St.....	190	1		1			
Schaefer, Simon.....	400 Grove St.....	191	1		1			
Schau, Chas.....	1232—8th St.....	192	1		1			
Schebinger, A.....	Green Bay Road.....	193	1		1			
Scheffler, Chas.....	595—10th St.....	194	1		1			
Sheller, Jacob.....	1139—6th St.....	195	1		1			
Schellinger & Tank.....	381 Chestnut St.....	196	18	4	22		1	
Schmidt, August.....	831—19th Ave.....	197	2		2			
Schneider, Phillip.....	917—6th Ave.....	198	1	1	2			
School, H.....	1403 Center St.....	199	1		1			
Scholz, Ferd.....	558—3d Street.....	200	1		1			
Total for 50 Establishments.....			92	11	103	3	2	

TABLE I.—CIGAR FACTORIES—MILWAUKEE.—Continued.

NAME.	ADDRESS.	Index No.	PERSONS EMPLOYED AT DATE OF INSPECTION.			No. between 16 and 38 years.	No. between 14 and 16 years.	No. under 14 years.
			Males.	Females.	Totals.			
Scheier, J.	1011 Walnut St.	201	3	1	4	...	1	...
Schroff, Frank.	385—11th Ave.	202	3	...	3	...	...	...
Schube, J.	660—17th St.	203	1	...	1	...	...	...
Schuenenann, Christ.	W. of Mer Park Sta.	204	1	...	1	...	...	...
Schultz, August.	451—28th St.	205	1	...	1	...	...	...
Schultz, Fred.	611—9th St.	206	1	...	1	...	...	...
Schunck, Joseph.	912 Sherman St.	207	1	...	1	...	...	...
Schuster & Kloth.	1067—2d St.	208	2	2	4	...	...	...
Schwank, J.	376—15th St.	209	1	...	1	...	...	...
Schwartzburg, H. A.	551—North Ave.	210	2	...	2	...	...	...
Schweiburger, G.	844—9th St.	211	4	...	4	...	...	...
Seifert, Richard.	494—14th St.	212	2	...	2	...	...	...
Sloski & Keisten.	1003—12th St.	213	2	...	2	...	...	...
Soldwedel, Fred.	1085—4th St.	214	1	...	1	...	...	...
Sochting, Louis.	1444—6th St.	215	1	...	1	...	...	...
Spaar, Edward H.	329—4th St.	216	7	1	8	...	...	...
Spanenberg, Chas.	908 North Ave.	217	1	...	1	...	...	...
Steffen, August.	493—27th St.	218	6	...	6	1	...	...
Stein, Carl.	1492—28th St.	219	1	...	1	...	...	...
Sterrath, Math.	1039 Kinnickinnic Av.	220	1	1	2	...	...	...
Straka, Peter.	1315 Lloyd St.	221	1	...	1	...	...	...
Stubbs, Hugo C.	401—5th St.	222	2	...	2	...	...	...
Strumpf, Ed.	1035 Greenfield St.	223	1	...	1	...	...	...
Szymanski & Koceja.	379 Mitchell St.	224	4	...	4	1	...	...
Tarneck, Antou.	1216 Sherman St.	225	1	...	1	...	...	...
Thiemann, C. W.	717 North Ave.	226	1	...	1	...	...	...
Tice, S. A.	1011—27th St.	227	1	...	1	...	...	...
Trester, F.	960—30th St.	228	1	...	1	...	...	...
Trodel, John.	136 Oneida St.	229	1	...	1	...	...	...
Ulrich, H.	1117 Cherry St.	230	1	...	1	...	...	...
Ulrich, William.	373—13th St.	231	5	6	11	5	1	1
Van Piederson, A.	531 Grand Ave.	232	3	...	3	1	...	...
Vedder, Ernst.	419 Grove St.	233	1	...	1	...	...	...
Vierheilig, A. E.	574 Potter Ave.	234	12	2	14	...	2	...
Vogt, Gustav.	705 Lincoln Ave.	235	1	...	1	...	...	...
Vogt & Thiele.	511—6th St.	236	5	1	6	...	...	...
Wachtschwanz, A.	506—12th St.	237	1	...	1	...	...	...
Waldekin, J.	1106—18th St.	238	1	...	1	...	...	...
Wangerin, W. H.	716 Garfield Ave.	239	1	...	1	...	...	...
Weber, Nikolaus.	753—7th St.	240	1	...	1	...	...	...
Wedemeyer, Anton.	896—30th St.	241	1	...	1	...	...	...
Weil, H.	619 Greenbush St.	242	1	...	1	...	...	...
Wenzel, Conrad.	751—1st St.	243	3	...	3	...	...	...
Wesolock, Martin.	681—10th Ave.	244	3	2	5	...	...	...
Wieck, J.	434—7th St.	245	4	...	4	...	1	...
Widschmann, Ernst.	Pt Washington Road.	246	1	...	1	...	...	...
Weisendanger, Ch.	1060 Island Ave.	247	1	...	1	...	...	...
Weisendanger, J. K.	453—18th St.	248	1	...	1	...	...	...
Wilkinson, H. L.	Wauwatosa.	249	1	...	1	...	...	...
William, Gustav.	536—20th Ave.	250	1	...	1	...	...	...
Total for 50 establishments.			104	16	120	8	5	1

TABLE I.—CIGAR FACTORIES—MILWAUKEE.—Continued.

NAME.	ADDRESS.	Index No.	PERSONS EM- PLOYED AT DATE OF INSPECTION.			No. between 16 and 18 years.	No. between 14 and 16 years.	No. under 14 years
			Males.	Females.	Totals.			
Williams, Rudolph.....	460—7th St.....	231	1	.....	1	.....	.....	.....
Williams & Brencke Cigar Mfg. Co.....	408 Grand Ave.....	232	14	4	20	.....	.....	.....
Winkler, C. F.....	813—12th St.....	233	4	.....	4	.....	1	.....
Winter, Chas. H.....	411—25th Ave.....	234	1	.....	1	.....	.....	.....
Winter, John & Co.....	2113 Galena St.....	235	2	.....	2	.....	.....	.....
Wolfgang, Frank.....	1233 Buffum St.....	236	4	.....	4	.....	.....	.....
Wolfgang, Fred A.....	2107 Center St.....	237	1	.....	1	.....	.....	.....
Yahke, F.....	1177 8th St.....	238	1	1	2	.....	.....	.....
Youngmann, Chas.....	12 Wells St.....	239	4	.....	4	.....	1	.....
Youngmann, Fred.....	825—9th St.....	240	1	.....	1	.....	.....	.....
Zarling, Otto.....	3021 Cne ry St.....	241	1	.....	1	.....	.....	.....
Zeise, Albert.....	839—8th St.....	242	1	.....	1	.....	.....	.....
Zernia, Robert.....	2115 Walnut St.....	243	1	.....	1	.....	.....	.....
Zilins, J.....	652—10th Ave.....	244	1	1	2	.....	.....	.....
Zess & Abraham.....	651 Muskego.....	245	2	.....	2	.....	.....	.....
Anderson, James M.....	210 State St.....	246	1	.....	1	.....	.....	.....
Bruesser, Herman C.....	910 Sobieski St.....	247	1	.....	1	.....	.....	.....
Etznis, Joseph.....	398—10 Broadway.....	248	12	9	21	2	1	.....
Fielder, Paul.....	877 Marshall St.....	249	1	1	2	.....	.....	.....
Frank, H. O.....	470 Farwell Ave.....	250	12	5	17	3	1	.....
Goelz Bros.....	538 Market Street.....	251	2	.....	2	.....	.....	.....
Hoffman, Jos.....	554—11th St.....	252	2	.....	2	.....	.....	.....
Kohorn, B. H.....	148 Huron St.....	253	1	1	2	.....	.....	.....
Laffin, M. J.....	169 Michigan St.....	254	1	.....	1	.....	.....	.....
Moser, Gottfried.....	367 Brady St.....	255	1	.....	1	.....	.....	.....
O'Connor, P.....	723 Jackson St.....	256	2	.....	2	.....	.....	.....
Plantz, Chas.....	171½ Detroit St.....	257	1	.....	1	.....	.....	.....
Rebel Jacob.....	910 Racine St.....	258	1	.....	1	.....	.....	.....
Schilling, John C.....	705 Broadway.....	259	1	.....	1	.....	.....	.....
Trio Cigar Mfg. Co.....	362 Bradford St.....	260	2	.....	2	.....	.....	.....
Total 30 establishments.....			88	22	108	6	4	.....
Totals for Milwaukee, or 230 establishments.....			670	203	878	35	50	11

TABLE I.—CIGAR FACTORIES OUTSIDE OF MILWAUKEE.

NAME.	ADDRESS.	Index No.	PERSONS EM- PLOYED AT DATE OF INSPECTION.			No. between 16 and 18 years.	No. between 14 and 16 years.	No. under 14 years.
			Males.	Females.	Totals.			
AMERY.								
Chas. Hockerson	Kellar Ave.....	281	2	.....	2	.....	.....	.....
ANTIGO.								
P. S. Feichtner	600 Edison Ave.....	282	4	.....	4	1	.....	.....
APPLETON.								
J. Jacoby	842 College Ave.....	283	10	.....	10	2	.....	.....
B. Lyons	715 College Ave.....	284	4	.....	4	1	.....	.....
L. C. Schmidt	775 College Ave.....	285	5	.....	5	1	1	.....
ASHLAND.								
Ashland Cigar & Tob. Co.	312 E. 2d St.....	286	14	3	17	5	.....	.....
Henry Betzer	2d St.....	287	9	2	11	1	.....	.....
C. A. Driese	817—2d St.....	288	2	.....	2	.....	.....	.....
James A. Devlin .....	.....	289	2	.....	2	.....	.....	.....
Huber Bros.	278—2d St.....	290	2	.....	2	1	.....	.....
John O'Connell	405 E. 2d St.....	291	2	.....	2	1	.....	.....
R. W. Parsons	2d St.....	292	5	.....	5	.....	.....	.....
S. K. Samuels .....	.....	293	1	.....	1	.....	.....	.....
BARABOO.								
August Bartz .....	.....	294	3	.....	3	.....	.....	.....
Robert Somers .....	.....	295	3	1	4	.....	.....	.....
BELOIT.								
P. H. Crahen	3d St.....	296	5	4	9	.....	.....	.....
W. J. Ennis .....	.....	297	2	1	3	.....	.....	.....
S. Flowrey .....	.....	298	4	4	8	.....	.....	.....
Kendall & Billington .....	.....	299	3	6	9	.....	.....	.....
Wm. Kruger .....	.....	300	1	1	2	.....	.....	.....
Chas. Oliver .....	.....	301	2	7	9	.....	.....	.....
Williams & Howard .....	.....	302	.....	3	3	.....	.....	.....
BEAVER DAM.								
J. C. Harder	152 Front St.....	303	4	.....	4	.....	.....	.....
Herkert Bros. ....	.....	304	2	.....	2	.....	.....	.....
H. C. Nicholas	151½ Front St.....	305	1	.....	1	.....	.....	.....
BLOOMER.								
Gus. Krens .....	.....	306	1	.....	1	.....	.....	.....
BRODHEAD.								
W. G. Adams .....	.....	307	3	.....	3	.....	.....	.....
CHIFFEWA FALLS.								
L. W. Bethke	523 Mansfield St.....	308	2	.....	2	.....	.....	.....
Herbert Bros.	519 Bridge St.....	309	5	.....	5	.....	.....	.....
J. P. Miller	Grand Ave.....	310	2	.....	2	.....	.....	.....
Henry Toepter, Jr.	142 Cedar St.....	311	4	1	5	1	.....	.....
Louis Zimmerman	607 Bridge St.....	312	9	.....	9	3	.....	.....
CLINTONVILLE.								
John Karczewski .....	.....	313	9	.....	9	2	1	.....
COLBY.								
August Weichert .....	.....	314	1	1	2	.....	.....	.....
DARLINGTON.								
Mieka & Huss	Martin Building.....	315	2	.....	2	.....	.....	.....
Gus. Z. Roelip .....	.....	316	8	.....	8	2	1	.....
DELAVER.								
W. T. Eye .....	.....	317	3	.....	3	1	1	.....
G. Finnegan .....	.....	318	1	1	2	.....	.....	.....
T. P. VanVelzer .....	.....	319	1	1	2	.....	.....	.....
W. C. VanVelzer .....	.....	320	3	6	9	1	1	.....

TABLE I.—CIGAR FACTORIES OUTSIDE OF MILWAUKEE.—Continued.

NAME.	ADDRESS.	Index No.	PERSONS EMPLOYED AT DATE OF INSPECTION.			No. between 16 and 18 years.	No. between 14 and 16 years.	No. under 14 years.
			Males.	Females.	Totals.			
DODGEVILLE.								
J. J. Hahn		321	2		2	1	1	
John J. Hahn		322	7		7	2	1	
DURAND.								
Helbig & Sherpy		323	4		4	1	1	1
EAU CLAIRE.								
Julius Derge		324	7		7	1	1	
West & Walterdorf	770—1st Ave.	325	8		8	2		
EDGERTON.								
J. W. Kurtz		326	3	1	4			
Joseph J. Leary	Phoenix block	327	4		4	1		
Henry Wesendouk	Curran bldg	328	2		2			
ELKHORN.								
Wm. Quinn		329	2		2			
EVANSVILLE.								
R. E. Smith		330	3		3	1		
FOND DU LAC.								
Brunderle & Church		331	3		3			
A. W. Borhn	78 E. Arnt St.	332	1		1			
R. B. Borhn	70 E. Johnson St.	333	5		5	1	1	
James Bruedill	15 Forest Ave.	334	2		2	1	1	
O. A. Church	72 W. 2d St., rear	335	1		1			
M. Clausen	212 Main St.	336	2		2			
Justine Bros	10 W. Division St.	337	2		2			
F. J. Kalett	415 Main St.	338	2		2			
Kretlow Bros	544 Main St.	339	2	1	3			
Theo. Landolf	381 Main St.	340	3		3			
H. W. Mabie	13 Forest St.	341	6	1	7			
F. J. Ohm	33 Amory St.	342	1		1			
Geo. Sander	311 Main St.	343	2	1	3			
Stauber & Froelling	541 Main St.	344	13	2	15	1	1	
GRAND RAPIDS.								
David Lutz, Jr		345	1		1			
D. E. Roberts	Rossie Bldg.	346	1		1			
F. F. Schuitz	Wagner Bldg	347	1		1			
GLENWOOD.								
Theo. Roland		348	2		2			
GREEN BAY.								
Peter Eggner	708 So. Broadway	349	2		2			
Jacob Giegler	924 Main St.	350	3		3			
John Huerth	310 N. Washington	351	10		10	2		
Chas. Surplice	647 Jackson St.	352	5		5	1	1	
Jacob Reis	1142 Main St.	353	7		7	2	2	
James Trich	1263 Main St.	354	3		3	1	1	
E. Vilim	315 Dousman St.	355	6		6	2		
Writz & Schmidt	114 So Broadway	356	8		8	3	3	
HUDSON.								
S. W. Bandy	Locust St.	357	2		2	1	1	
W. A. Egloff	2nd St.	358	5		5	1		
HURLEY.								
L. Fish		359	2	1	3			
M. Marquardt		360	4		4	1		
Edw. Uren		361	3		3			
JEFFERSON.								
Wm. H. Andre	Clark Bldg.	362	3		3			
A. F. Hoberman	Berger Bldg	363	4		4	1		

TABLE I.—CIGAR FACTORIES OUTSIDE OF MILWAUKEE.—Continued.

NAME.	ADDRESS.	Index No.	PERSONS EMPLOYED AT DATE OF INSPECTION.			No. between 16 and 18 years.	No. between 14 and 16 years	No. under 14 years.
			Males.	Females.	Totals.			
JEFFERSON, Continued.								
Chas. Leitz	Lentz Bldg	364	11	1	12	1		
E. Lentz	Lentz Bldg.	365	1	1	2			
JANESVILLE.								
T. F. McKeighe	Williams Est. Bldg	366	6		6			
W. J. Murphy	Corn Exchange	367	3		3			
Jno. Saulman	51 No. Main St.	368	6	1	7			
Messell Bros.	McKay Bldg.	369	2	1	3			
JUNEAU.								
Standard Cigar Co.		370	10		10	1	2	
KENOSHA.								
H. Andre	205 Main St.	371	1		1			
W. Dagenbock	157 Milwaukee Ave.	372	3	3	6			
Jno. Fox	368 Hansen St.	373	2		2			
Albert H. Granunder	76 No. Main St.	374	1		1			
Jos. I. Jones	350 Rock St.	375	2		2			
KEIL.								
J. Amman		376	5		5	1	1	
LA CROSSE.								
John Dengler	119 No 3rd St.	377	27		27	10	9	
Pumberlin & Wigenhorn	221-23 Main St.	378	48	22	70	13	11	
Joseph Riese	1107 So 4th St.	379	12		12	2	2	
Henry T. Waters	117 No 3rd St.	380	8	1	9	1		
LANCASTER.								
Kendall & Sternborn		381	3		3	1	1	
MADISON.								
Bans, Ambrecht & Wagn'r	Hobbins Block	382	9		9	2	2	
T. Dolhrnty	N. W. B. & Lassen Bldg	383	2	1	3			
H. Grove's Sons	119 So. Webster St.	384	24		24	7	5	
Geo. W. Neinaber	215 E Main St.	385	3		3			
MARSFIELD.								
Peter Beaver		386	4	1	5			
Jno. G. Hoetz		387	5	1	6			
MAYVILLE.								
Frank Brunke		388	8		8	2		
Wm. Redeske	Allen St.	389	2		2			
Otto Reschert	Furnace St.	390	1		1			
MENOMONIE.								
Anderson Bros.	Main St.	391	13	1	14	3	4	
MERRILL.								
J. J. Froeblich		392	4		4			
J. H. McCarthy		393	5		5	1		
MINERAL POINT.								
J. W. Mulhair	Main St.	394	3		3	1	1	
J. E. Phillips	Winn Building	395	2		2	1		
C. F. Springer	Jackson Building	396	4		4	1	1	
MONROE.								
Brunet & Co.	Wills Building	397	8		8	3	2	
C. H. Schneider	Jackson St.	398	5		5	1	1	
Geo. Walker	Wills Building	399	5		5	1	2	
NEW RICHMOND.								
W. G. Boehm	Main St.	400	1		1			1

TABLE I.—CIGAR FACTORIES OUTSIDE OF MILWAUKEE.—Continued.

NAME.	ADDRESS.	Index No.	PERSONS EM- PLOYED AT DATE OF INSPECTION.			No. between 16 and 18 years.	No. between 14 and 16 years.	No. under 14 years.
			Males.	Females.	Totals.			
OCONTO.								
Geo. M. Froward	Main St.	401	3	.....	3	.....	.....	.....
R. F. Hass	Lot 2, block 10.	402	3	.....	3	1	1	.....
OSHKOSH.								
H. Derksen & Sons.	148 Main St.	403	5	2	7	2	1	.....
Günther & Wichmann.	Mehlman Building	404	6	1	7	1	.....	.....
Ising & Anler	16 Church St.	405	5	1	6	1	1	1
C. Look	55 High St.	406	2	1	3	1	.....	.....
Henry Meyer	218 Monroe Ave.	407	2	.....	2	1	1	.....
Geo. W. Oaks	111 Hazel St.	408	1	.....	1	.....	.....	.....
Otto & Weber	12 Merrill St.	409	8	2	10	2	.....	.....
H. W. Peck	118 Main St.	410	12	5	17	2	2	.....
H. C. Ramsell	170 So. Main St.	411	1	.....	1	.....	.....	.....
Martin Scharn	361 Ceape St.	412	8	2	19	2	2	.....
An'on Schemer	121 Main St.	413	8	2	10	.....	1	.....
Chas. Schul & Co	10 Division St.	414	6	2	8	1	1	.....
Jno. Stein	300 So. 9th St.	415	2	.....	2	.....	.....	.....
Oshkosh Cigar Co	140 Main St.	416	8	1	7	.....	.....	.....
Geo. Wegmann	42 So. Main St.	417	4	1	5	1	1	.....
John Wichman	26 Mt. Vernon St.	418	8	2	10	1	.....	.....
Witzel & Goettman	37 Ceape St.	419	6	1	7	2	2	.....
PLATTEVILLE.								
Jacob Karmann & Son.	Karmann Building	420	4	.....	4	.....	.....	.....
Knebel & Steffens	Hunner's Building	421	4	.....	4	.....	.....	.....
M. S. Sickle	Sickle Building	422	18	7	25	.....	.....	.....
PORTAGE.								
P. W. Eulberg	McDonald Building	423	2	.....	2	.....	.....	.....
C. E. Gieseler	Mohr Building	424	5	.....	5	1	.....	.....
PRAIRIE DU CHIEN.								
Fred Evert	Evert Building	425	2	1	3	.....	.....	.....
RACINE.								
Anton Eckert	1315 Villa St.	426	4	.....	4	.....	.....	.....
Geo. Gowder	2 Main St.	427	1	.....	1	.....	.....	.....
John Hebblethaste	187 N. Main St.	428	6	.....	6	2	.....	.....
M. J. Hermans	439 Main St.	429	4	.....	4	1	1	.....
Paul Knitch	1731 N. Erie St.	430	1	.....	1	.....	.....	.....
Edw. D. Neff	1247 Washington Ave.	431	2	.....	2	.....	.....	.....
N. F. Nelson	1745 Northwest Ave.	432	4	.....	4	1	.....	.....
B. S. Page	528 Monument Square.	433	5	1	6	.....	.....	.....
Armin Saver	1812 Pellica St.	434	1	.....	1	.....	.....	.....
W. F. Schmerler	1201 Villa St.	435	5	.....	5	.....	.....	.....
Chas. Schwieletz	1135 Wisconsin St.	436	2	.....	2	.....	.....	.....
John Stufel	611 Kewaunee St.	437	22	.....	22	2	.....	.....
E. A. Tanska	1208 State St.	438	2	.....	2	.....	.....	.....
Louis Wischmann	1410 Buchanan St.	439	1	1	2	1	.....	.....
RANDOLPH.								
Jacob G. Probst	Front St.	440	2	.....	2	.....	.....	.....
REEDSBURG.								
A. W. Benshausen	Young Building	441	5	.....	5	1	.....	.....
RHINELANDER.								
M. Glass, Jr.	Brown St.	442	5	.....	5	1	.....	.....
RICE LAKE.								
V. H. Paradis .....	.....	443	6	.....	6	2	.....	.....
RICHLAND CENTER.								
M. H. Libershal	Block Building	444	2	1	3	.....	.....	.....

TABLE I.—CIGAR FACTORIES OUTSIDE OF MILWAUKEE.—Continued.

NAME.	ADDRESS.	Index No.	PERSONS EMPLOYED AT DATE OF INSPECTION.			No. between 16 and 18 years.	No. between 14 and 16 years.	No. under 14 years.
			Males.	Females.	Totals.			
SHEBOYGAN.								
Dungan & Hanford.....	709—8th St.....	445	12	8	20	1	2	
Frank Tries.....	607 N. 8th St....	446	5		5	1		
Henry Wiehr.....		447	2	1	3			
SPRING VALLEY.								
A. W. Fleisher		448	1		1			
STEVENS POINT.								
B. H. Kohorn Co.....		449	6		6			
J. D. Langasky.....	5th Ave.....	450	3		3			
L. Port.....		451	7		7	2		
STOUGHTON.								
C. M. Hintze.....	Colds Block.....	452	3	1	4	1	1	
Julius Jenson.....	Anderson Building	453	3		2			
Henry Zwicker.....	Zwicker Building	454	4	2	6			
TOMAH.								
A. P. Boehmer.....	Warren Building.....	455	2		2	1	1	
WATERTOWN.								
A. F. Miller.....	214 Main St.....	456	4		4	1	1	
A. Kramer.....	415½ Main St.....	457	2		2	1	1	
Edw. Newmann.....	409 Main St.....	458	9		9	1	1	1
Schlueter Bros.....	103 W. Main St.....	459	8		8	1	1	
Wilkowski Bros.....	214—4th St.....	460	17	1	18	2	1	1
WAUKESHA.								
Phillip Weicheimer	418 Broadway.....	461	11		11	2	2	
WAUPUN.								
T. W. Mazon, Prop'r Prison City Cigar Factory..		462	6	1	7			
WAUSAU.								
A. R. Bardeen.....		463	2		2		1	
Leo B nzer.....		464	2		2			
Butler & Benkholder.....	214—3rd St.....	465	9		9	3	3	
E. C. Kretlow & Son.....		466	3		3	1		
A. L. Kreshak.....	Jule Jones Building	467	17	4	21	10	6	
Ph. Stadler.....	720 Washington St.....	468	8		8	5	3	3
WEST SUPERIOR.								
Figemuller & Zing.....		469	8		8	1		
J. M. Finstead.....	2313 Butler Ave.....	470	6		6	1		
Fred C. Marx.....	1716—7th St.....	471	9	2	11	2	2	
Henry Puls, Calumet Fac.	223 Tower Ave.....	472	3	1	4	1		
L. Standingr.....	618 Tower Ave.....	473	2	1	3			
WHITEWATER.								
J. C. McGinnis.....		474	3		3			
DAYFIELD.								
Jno. Fiege.....		475	5		5	1	1	
DE PERE.								
F. A. Smith.....		476	1		1			
J. M. Smits.....		477	2		2			
John Wolske.....		478	2		2	1		
GREEN BAY.								
Sam Golden	McCourt Bldg	479	2		2			
D. Nye.....	Cherry St.....	480	3		3			
Schrau & Umbehama.....	Washington St.....	481	8		8	2	1	
Chas Schunck, Jr.....		482	8		8			
LODI.								
E. N. Davis.....		483	1		1			

TABLE I.—CIGAR FACTORIES OUTSIDE OF MILWAUKEE.—Continued.

NAME.	ADDRESS.	Index No.	PERSONS EM. PLOYED AT DATE OF INSPECTION.			No. between 16 and 18 years.	No. between 14 and 16 years.	No. under 14 years.
			Males.	Females.	Totals.			
	MEDFORD.							
Dumke Bros		484	6	1	7	1		
	NEILLSTVILLE.							
Nash Bros		485	3		3	1	1	1
	NEW LONDON.							
Fred C. Renter		481	2		2			
Chas. Schaller	Perry Bldg.	487	2		2			
	PHILLIPS.							
C. Jussen		488	4		4	1	1	
	STANLEY.							
Chas. W. Hoffman		489	3		3	1		
	SHAWANO.							
Nick Schneider		490	2		2			
	WASHBURN.							
Aug. Geisent & Co.		491	2		2	1		1
	WATERTOWN.							
Wiggenhorn Bros		492	37	4	41			
Total for 212 establishm'ts outside of Milw'ke.			1045	144	1189	183	108	12

TABLE II.—CLASSIFICATION BY CITIES AND TOWNS.

The itemized information contained in Table I is condensed and here grouped by towns inspected and arranged alphabetically.

TOWN, CITY AND COUNTY.	No. of establishments.	PERSONS EMPLOYED AT DATE OF INSPECTION.			No. between 16 and 18 years.	No. between 14 and 16 years.	No. under 14 years.
		Males.	Females.	Totals.			
Amery, Polk Co.....	1	2		2			
Antigo, Langlade Co.....	1	4		4	1		
Appleton, Outagamie Co.....	3	19		19	4	1	
Ashland, Ashland Co.....	8	37	5	42	8		
Baraboo, Sauk Co.....	2	6	1	7			
Bayfield, Bayfield Co.....	1	5		5	1	1	
Beaver Dam, Dodge Co.....	3	7		7			
Beloit, Rock Co.....	7	17	23	43			
Bloomer, Chippewa Co.....	1	1		1			
Brodhead, Green Co.....	1	3		3			
Chippewa Falls, Chippewa Co.....	5	22	1	23	4		
Clintonville, Waupaca Co.....	1	9		9	2	1	1
Colby, Clark Co.....	1	1	1	2			
Darlington, La Fayette Co.....	2	10		10	2	1	1
Delavan, Walworth Co.....	4	8	8	16	2	2	
DePere, Brown Co.....	3	5		5	1		
Dodgeville, Iowa Co.....	2	9		9	3	2	
Durand, Pepin Co.....	1	4		4	1	1	1
Eau Claire, Eau Claire Co.....	2	15		15	3	1	
Edgerton, Rock Co.....	3	9	1	10	1		
Elkhorn, Walworth Co.....	1	2		2			
Evansville, Rock Co.....	1	3		3	1		
Fond du Lac, Fond du Lac Co.....	14	45	5	50	3	3	
Glenwood, St. Croix Co.....	1	2		2			
Grand Rapids, Wood Co.....	3	3		3			
Greekt Bay, Brown Co.....	12	60		60	13	8	
Hudson, St. Croix Co.....	2	7		7	2	1	
Hurley, Iron Co.....	3	9	1	10	1		
Jefferson, Jefferson Co.....	4	19	2	21	2		
Janesville, Rock Co.....	4	17	2	19			
Juneau, Dodge Co.....	1	10		10	1	2	
Kiel, Sheboygan Co.....	1	5		5	1	1	
Kenosha, Kenosha Co.....	5	9	3	12	2		
La Crosse, La Crosse Co.....	4	95	23	118	26	22	
Lancaster, Grant Co.....	1	3		3	1	1	
Lodi, Columbia Co.....	1	1		1			
Madison, Dane Co.....	4	38	1	39	9	7	
Marshfield, Wood Co.....	2	9	2	11	1		
Menominee, Dodge Co.....	3	11		11	2		
Medford, Taylor Co.....	1	6	1	7	1		
Menomonie, Dunn Co.....	1	13	1	14	3	4	
Merrill, Lincoln Co.....	2	9		9	1		
Milwaukee, Milwaukee Co.....	28	670	208	878	35	50	11
Mineral Point, Iowa Co.....	3	9		9	3	2	
Monroe, Green Co.....	3	18		18	5	5	
Neillsville, Clark Co.....	1	3		3	1	1	1
New London, Waupaca Co.....	2	4		4			
New Richmond, St. Croix Co.....	1	1		1			1
Oconto, Oconto Co.....	2	6		6	1	1	
Oshkosh, Winnebago Co.....	17	90	23	113	17	12	1
Phillips, Price Co.....	1	4		4	1	1	
Portageville, Grant Co.....	3	23	7	33			
Portage, Columbia Co.....	2	7		7	1		
Prairie du Chien, Crawford Co.....	1	2	1	3			
Racine, Racine Co.....	14	60	2	62	7	1	

TABLE II.—CLASSIFICATION BY CITIES AND TOWNS.— Continued.

TOWN, CITY AND COUNTY.	No. of establishments.	PERSONS EMPLOYED AT DATE OF INSPECTION.			No. between 16 and 18 years.	No. between 14 and 16 years.	No. under 14 years.
		Males.	Females.	Totals.			
Randolph, Dodge and Columbia Cos.....	1	2	.....	2	.....	.....	.....
Reedsburg, Sauk Co.....	1	5	.....	5	1	.....	.....
Rhineland, Oneida Co.....	1	5	.....	5	.....	.....	.....
Rice Lake, Barron Co.....	1	6	.....	6	2	.....	.....
Richland Center, Richland Co.....	1	2	1	3	.....	.....	.....
Shawano, Shawano Co.....	1	2	.....	2	.....	.....	.....
Sheboygan, Sheboygan Co.....	3	19	9	28	2	2	.....
Spring Valley, Pierce Co.....	1	1	.....	1	.....	.....	.....
Stanley, Chippewa Co.....	1	3	.....	3	1	.....	.....
Stevens Point, Portage Co.....	3	16	.....	16	2	.....	.....
Stoughton, Dane Co.....	3	10	3	13	1	1	.....
Tomah, Monroe Co.....	1	2	.....	2	1	1	.....
Washburn, Bayfield Co.....	1	2	.....	2	1	.....	.....
Watertown, Jefferson Co.....	6	77	5	82	6	5	1
Waukesha, Waukesha Co.....	1	11	.....	11	2	2	.....
Waupun, Fond du Lac Co.....	1	6	1	7	.....	.....	.....
Wausau, Marathon Co.....	6	41	4	45	19	13	3
West Superior, Douglas Co.....	5	33	4	37	5	2	.....
Whitewater, Walworth Co.....	1	3	.....	3	.....	.....	.....
Total for state.....	492	1,715	352	2,067	218	158	21

CIGAR FACTORIES.

The following table shows the number of cigar factory employes in each of the places named and the percentage of male and female; also the total percentage of employes under 18 years of age, and the percentages of employes under 14, between 14 and 16 and between 16 and 18:

LOCATION OF ESTABLISHMENTS.	Total number employed.	Percentage of male persons employed.	Percentage of female persons employed.	PERCENTAGE OF EMPLOYEES UNDER 18 YEARS WITH REFERENCE TO TOTAL EMPLOYED.			
				Between 16 and 18.	Between 14 and 15.	Under 14 years.	Total under 18 years.
Appleton	19	100	.....	21	5.3	.....	26.3
Ashland	42	88.1	11.9	19	.....	.....	19
Beloit	43	39.5	60.5	.....	.....	.....	.....
Chippewa Falls	23	95.7	4.3	17.4	.....	.....	17.4
Delavan	16	50	50	12.5	12.5	.....	25
Eau Claire	15	100	.....	20	6.6	.....	26.6
Fond du Lac	50	90	10	6	6	.....	12
Green Bay	60	100	.....	21.7	13.3	.....	35
Jefferson	21	90.5	9.5	9.5	.....	.....	9.5
Janesville	19	89.5	10.5	.....	.....	.....	.....
Kenosha	12	75	25	16.6	.....	.....	16.6
La Crosse	118	80.5	19.5	22	18.7	.....	40.7
Madison	39	97.4	2.6	23.1	17.9	.....	41
Milwaukee	878	76.3	23.7	4	5.7	.1	9.8
Monroe	18	100	.....	27.8	27.8	.....	55.6
Oshkosh	113	79.7	20.3	15	10.7	.9	26.6
Platteville	23	78.8	21.2	.....	.....	.....	.....
Racine	62	96.8	3.2	11.3	1.6	.....	12.9
Sheboygan	28	68	32	7.9	7.1	.....	14.9
Stevens Point	16	100	.....	12.5	.....	.....	12.5
Watertown	82	93.9	6.1	7.3	6.1	2.4	15.8
Wausau	45	91.1	8.9	42.2	28.9	6.7	77.8
West Superior	37	89.2	10.8	13.5	5.5	.....	19
Other places	278	95	5	15.8	8.6	2.2	26.6
Totals	2,067	83	17	10.5	7.7	1.1	19.3

The following table is condensed from the one preceding, and is designed to furnish a comparison of the number and percentage of employes, of various classes, in cigar factories in the city of Milwaukee with those in the state outside of Milwaukee and in the state as a whole:

CLASSIFICATION.	Total number employed.	Per cent. of males.	Per cent. of females.	PERCENTAGE OF EMPLOYEES UNDER 18 YEARS OF AGE.			
				Between 16 and 18.	Between 12 and 16.	Under 14 years.	Total under 18 years.
In city of Milwaukee	878	76.3	23.7	4.0	5.7	1.2	10.9
Outside of Milwaukee.....	1,189	87.9	12.1	15.4	19.1	1.0	25.5
Entire state.....	2,057	83.0	17.0	10.5	7.8	1.1	19.3

The preceding table gives percentages of females at work, to the total number of employees, while the function of the following is to permit a comparison of the number and percentage of establishments employing females with the whole number of establishments inspected in Milwaukee, in the state outside of Milwaukee and in the entire state.

The number of cigar factories inspected in Milwaukee was.....	280
Of this number those employing females to manufacture cigars were	43 or 15.4%
The number of cigar factories inspected in state outside of Milwaukee was	212
Of this number those employing females to manufacture cigars were	62 or 29.2%
The entire number of establishments inspected in the state was....	492
Of this number those employing females were	105 or 21.3%

The condition of this industry with reference to the labor of all persons under the age of 18 years is shown by the following percentages:

Those under 14, between 14 and 16, and between 16 and 18, are shown separately in order that the data may be of greater value, in illustrating the effect of past legislation, which makes special requirements as to the employment of each protected class.

In each class there is stated the percentage (1st) of persons of such class to total employees, and (2nd) of establishments employing such persons to the total number of establishments.

CIGAR FACTORIES.

Percentage of children under 14 years of age—illegally at work—to total number employees	1.1%
Percentage of establishments illegally employing children under 14 years of age	3.8%
Percentage of establishments not violating the law in this respect.....	96.2%
Percentage of children between 14 and 16 years of age—illegally at work—to total number employees.....	7.7%
Percentage of establishments illegally employing children between 14 and 16 years of age	16.4%
Percentage of establishments not violating the law in this respect.....	83.6%
Percentage of persons between 16 and 18 years of age to total number of employees	10.5%
Percentage of establishments employing persons between 16 and 18 years of age	28.2%
Percentage of establishments not employing persons between 16 and 18 years of age	71.8%

The index numbers given in this list of orders refer to numbers assigned to cigar factories in table 1 and 2, which can be consulted for the names and addresses.

Where one phrase could be used to convey the effect of several orders it was so used to save space in the "List of orders issued." To illustrate: An order was actually issued for every violation of the several statutory requirements as to size of windows, percentage of entire window area to floor space, height of work rooms, number of cubic feet of air, space in each room, number of cubic feet air space to each employe in day time and at night, number of square feet of surface space per employee, etc., etc., but the general result to follow several orders is shown wherever possible by one sentence.

LIST OF ORDERS ISSUED.

The necessity for brevity requires that the word "ordered" be understood to precede each sentence.

Index No.

- 1 Area of windows increased.
- 2 Area of windows increased, and floors scrubbed.
- 3 Area of windows increased.
- 4 Area of windows increased; height of work room increased or premises vacated.
- 5 Area of windows increased.
- 6 Area of windows increased.
- 7 Area of windows increased; height of work room increased or premises vacated. Tables and floors cleaned, floors scrubbed.
- 9 Affidavit procured for child under 16, child under 14 discharged. Area of windows increased.
- 10 Affidavit procured for child under 16, area of windows increased, floors scrubbed.
- 11 Area of windows increased.
- 12 Affidavit procured for child under 16.
- 15 Area of windows increased, floor scrubbed.
- 16 Area of windows increased.
- 17 Area of windows increased, height of work room increased or premises vacated.

- 18 To remove or increase size of work room, floors scrubbed.
- 19 Area of windows increased.
- 20 Area of windows increased.
- 21 Area of windows increased.
- 22 To vacate basement, and provide shop to comply with law.
- 23 Area of windows increased.
- 24 Affidavit procured for child under 16, child under 14 discharged, floors scrubbed.
- 25 Area of windows increased, floors scrubbed.
- 26 Area of windows increased, separate closet for females, door to living room closed.
- 27 Area of windows increased, tables and floors cleaned, floors scrubbed, windows opened before and after working hours.
- 28 Area of windows increased.
- 29 Area of windows increased.
- 30 Affidavit procured for child under 16, floors scrubbed.
- 31 Area of windows increased.
- 33 Area of windows increased.
- 35 Area of windows increased.
- 38 Area of windows increased.
- 39 To vacate basement, and provide shop to comply with law.
- 40 Windows made movable, and opened before and after working hours, separate closet for females, floors scrubbed.
- 41 Area of windows increased.
- 42 To vacate basement, and provide shop to comply with law.
- 43 Area of windows increased.
- 46 Affidavit procured for child under 16.
- 47 Two children under 14 discharged, area of windows increased.
- 48 Area of windows increased, floors scrubbed.
- 49 Area of windows increased.
- 50 Area of windows increased.
- 51 Area of windows increased, tables and floors cleaned, floors scrubbed.
- 52 Floors scrubbed.
- 53 Windows kept open before and after working hours, tables and floors cleaned and scrubbed.
- 54 Height of work room increased or premises vacated, area of windows increased, floors scrubbed.
- 56 Area of windows increased.
- 58 Area of windows increased, floors scrubbed.
- 59 Area of windows increased, floors scrubbed.
- 60 Area of windows increased, floors scrubbed.
- 61 Area of windows increased, height of work room increased or premises vacated.
- 62 To remove or increase size of work room, floors scrubbed.
- 63 Area of windows increased, child under 14 discharged, floors scrubbed.
- 64 Affidavit for child under 16, area of windows increased.
- 65 Floors scrubbed.
- 67 Area of windows increased.
- 68 Area of windows increased, floor scrubbed.
- 70 Area of windows increased.
- 71 Area of windows increased, floors scrubbed.
- 72 Area of windows increased.
- 73 Area of windows increased, height of work room increased or premises vacated.
- 74 To vacate basement, and provide shop to comply with law.
- 75 Area of windows increased.
- 76 Area of windows increased, separate closet for females.
- 78 Floors scrubbed.
- 79 Area of windows increased, height of work room increased or premises vacated.
- 80 Area of windows increased, floors scrubbed.
- 81 Floors scrubbed, tables dusted and floors swept.
- 82 To vacate basement, and provide shop to comply with law.
- 83 Area of windows increased, floors scrubbed.
- 84 Area of windows increased.
- 85 Area of windows increased.
- 86 Area of windows increased.
- 88 Height of work room increased or premises vacated, window area increased.
- 89 Area of windows increased.
- 91 Floors scrubbed.
- 92 Floors scrubbed, tables dusted, floors swept.
- 93 Area of windows increased, floors scrubbed.
- 94 Affidavit for child under 16, floors scrubbed.
- 96 Area of windows increased.
- 97 Area of windows increased.
- 98 Area of windows increased.
- 99 Area of windows increased.
- 100 Floors scrubbed.
- 101 Area of windows increased, floors scrubbed, cuspidors provided.
- 102 Area of windows increased.
- 103 Area of windows increased.
- 104 To vacate basement and provide shop to comply with law.
- 106 Area of windows increased.

- 107 To vacate basement and provide shop to comply with law.
- 108 To vacate basement and provide shop to comply with law.
- 109 Area of windows increased,
- 110 Tables dusted, floors swept, floors scrubbed
- 111 Area of windows increased.
- 112 To vacate basement and provide shop to comply with law.
- 113 Area of windows increased, affidavit for child under 16, child under 14 discharged, windows opened before and after working hours.
- 114 Affidavits for two children under 16, area of windows increased, shop white-washed.
- 115 Floors scrubbed.
- 116 Area of windows increased.
- 117 Area of windows increased, floors scrubbed.
- 118 Floors scrubbed.
- 119 Area of windows increased.
- 120 Area of windows increased.
- 121 Area of windows increased.
- 122 Area of windows increased, floors scrubbed.
- 123 Area of windows increased, floors scrubbed.
- 124 Area of windows increased, door from living room closed.
- 125 To vacate basement and provide shop to comply with law.
- 126 To vacate basement and provide shop to comply with law.
- 127 Separate closet for females.
- 128 To vacate basement and provide shop to comply with law.
- 129 Floors scrubbed.
- 130 To vacate basement and provide shop to comply with law.
- 131 Area of windows increased.
- 132 To vacate basement and provide shop to comply with law.
- 133 Area of windows increased, windows opened before and after working hours.
- 134 Area of windows increased.
- 135 Height of work room increased or premises vacated, tables dusted and floor swept daily, floor scrubbed.
- 136 Area of windows increased.
- 137 Height of work room increased or premises vacated, area of windows increased and floors scrubbed.
- 138 Windows made movable, to open before and after working hours.
- 139 To vacate basement and provide shop to comply with the law.
- 140 Area of windows increased, floors scrubbed.
- 141 Area of windows increased, windows opened before and after working hours, tables dusted and floors swept daily, floors scrubbed.
- 142 Area of windows increased, floors scrubbed.
- 143 Height of work room increased or premises vacated, area of windows increased, to close door from living room, separate closet for females.
- 144 Height of work room increased or premises vacated, area of windows increased.
- 145 Area of windows increased.
- 146 Area of windows increased.
- 147 Height of work room increased or premises vacated, area of windows increased, floors scrubbed.
- 148 Height of work room increased, area of windows increased.
- 149 Area of windows increased, floors scrubbed.
- 150 Area of windows increased, height of work room increased or premises vacated.
- 151 Area of windows increased.
- 152 To vacate basement and provide shop to comply with law.
- 153 To vacate basement and provide shop to comply with law.
- 154 Height of work room increased or premises vacated.
- 155 Area of windows increased.
- 156 Area of windows increased, floors scrubbed.
- 157 Area of windows increased.
- 158 Height of work room increased, or premises vacated, window area increased, floors scrubbed.
- 159 Area of windows increased.
- 160 Area of windows increased, floors scrubbed, windows opened before and after working hours.
- 161 Area of windows increased.
- 162 Height of work room increased or premises vacated, area of windows increased.
- 163 Area of windows increased, floors scrubbed.
- 164 Area of windows increased, floors scrubbed, windows opened before and after working hours.
- 165 Area of windows increased.
- 166 Height of work room increased or premises vacated, area of windows increased.
- 167 Area of windows increased, floors scrubbed.
- 168 Area of windows increased.
- 169 Area of windows increased, floors scrubbed.
- 170 To vacate basement and provide shop to comply with law.
- 171 Area of windows increased, floors scrubbed.
- 172 Area of windows increased.
- 173 Height of work room increased or premises vacated, window area increased.
- 174 Window area increased, floors scrubbed, separate closet for females.
- 175 Height of work room increased or premises vacated, window area increased, floors scrubbed.
- 176 Area of windows increased.
- 177 Area of windows increased, floors scrubbed,
- 178 Area of windows increased.

- 181 Floors scrubbed.
- 182 Area of windows increased.
- 183 Area of windows increased, doors to living room closed.
- 184 Area of windows increased.
- 185 Area of windows increased.
- 186 Affidavit for child under 16, window area increased, floors scrubbed.
- 187 Area of windows increased, floors scrubbed.
- 188 Area of windows increased, windows opened before and after working hours.
- 189 To vacate basement and provide shop to comply with law.
- 190 Window area increased, floors scrubbed.
- 191 Area of windows increased.
- 192 Area of windows increased.
- 193 Height of work room increased or premises vacated, window area increased, tables dusted and floor swept daily, floor scrubbed, windows opened before and after working hours, to close up door to kitchen.
- 195 Door to bed room permanently closed, height of work room increased, window area increased, floors scrubbed.
- 196 Affidavit for child under 16, window area increased.
- 197 Door to living room permanently closed, window area increased, tables dusted and floor swept and scrubbed.
- 198 Area of windows increased.
- 199 Area of windows increased, tables dusted and floor swept and scrubbed.
- 200 Height of work room increased or premises vacated, area of windows increased.
- 201 Affidavit for child under 16, separate closets for females.
- 202 Area of windows increased, floor scrubbed.
- 203 Area of windows increased.
- 204 Area of windows increased, floors scrubbed.
- 205 Height of work room to be increased or premises vacated, window area increased, floors scrubbed.
- 206 Height of work room increased or premises vacated, window area increased.
- 207 Area of windows increased.
- 208 Height of work room increased or premises vacated, window area increased, floors scrubbed.
- 209 Area of windows increased.
- 210 Area of windows increased, floors scrubbed, cuspidors provided.
- 211 Area of windows increased.
- 212 Door to kitchen closed permanently, to provide separate entrance, window area increased.
- 214 Area of windows increased.
- 215 Area of windows increased, floors scrubbed, floor and table kept clean.
- 216 Area of windows increased, floor scrubbed.
- 217 To vacate basement and provide shop to comply with law.
- 218 Area of windows increased, floors scrubbed, cuspidors provided.
- 219 Area of windows increased, floors scrubbed, door to living room permanently closed.
- 220 Separate closet for females, window area increased, door to living room permanently closed.
- 221 Area of windows increased.
- 222 Windows opened before and after working hours, windows fixed to open.
- 223 To vacate basement and provide shop to comply with law.
- 224 Area of windows increased, floors scrubbed.
- 225 Area of windows increased.
- 226 Door to living room permanently closed.
- 227 Area of windows increased.
- 228 To vacate basement and provide shop to comply with law.
- 229 Area of windows increased.
- 231 Affidavit for child under 16, child under 14 discharged, area of windows increased.
- 233 Window fixed to open before and after working hours.
- 234 Affidavit for two children under 16, window area increased.
- 235 To vacate basement and provide shop to comply with law.
- 236 To vacate basement and provide shop to comply with law.
- 237 To provide windows or vacate premises.
- 238 Height of work room increased or vacate premises, window area increased.
- 239 Door to living room permanently closed.
- 240 Tables dusted and floor swept daily, floor scrubbed.
- 241 Area of windows increased.
- 242 Area of windows increased.
- 243 Area of windows increased.
- 244 Area of windows increased.
- 245 Affidavit for child under 16.
- 246 Area of windows increased.
- 248 To vacate basement and provide shop to comply with law.
- 249 Area of windows increased.
- 250 To vacate basement and provide shop to comply with law.
- 251 Area of windows increased, floors scrubbed, height of work room increased or premises vacated.
- 252 Area of windows increased, floors scrubbed.
- 253 Affidavit for child under 16, window area increased, floors scrubbed.
- 254 Area of windows increased.
- 255 Height of work room increased, area of windows increased, floors scrubbed.

- 256 Area of windows increased, floors scrubbed.
- 257 Area of windows increased.
- 258 Area of windows increased, doors to kitchen permanently closed, separate water closet for females.
- 259 Affidavit for child under 16.
- 260 Area of windows increased.
- 261 Area of windows increased.
- 262 Area of windows increased.
- 263 Area of windows increased.
- 264 Area of windows increased.
- 265 To vacate basement and provide shop to comply with law.
- 266 Area of windows increased.
- 267 Area of windows increased.
- 268 Affidavit filed for child under 16, window area increased, floors scrubbed.
- 270 Affidavit for child under 16, window area increased.
- 271 Area of windows increased, tables dusted, floors swept daily and scrubbed weekly.
- 273 Floors scrubbed, separate closet for females.
- 276 Floors scrubbed.
- 278 Area of windows increased.
- 279 Area of windows increased, tables dusted, floor swept daily and scrubbed weekly.
- 280 Floors scrubbed weekly.
- 282 Area of windows increased.
- 283 Affidavit for two children under 16, window area increased, floors scrubbed.
- 284 Area of windows increased.
- 285 Affidavit for child under 16, window area increased, floors scrubbed.
- 286 Separate closet for females.
- 287 Separate closet for females.
- 289 Area of windows increased.
- 294 Area of windows increased.
- 295 Height of work room increased, window area increased.
- 297 Separate closet for females.
- 299 Area of windows increased.
- 300 Area of windows increased, separate water closet for females.
- 301 Area of windows increased, floors scrubbed.
- 302 Area of windows increased.
- 303 Area of windows increased.
- 305 Area of windows increased.
- 307 To vacate premises or enlarge room so that each employe shall have at least 250 cubic feet air space, floors scrubbed.
- 309 Area of windows increased.
- 310 Area of windows increased.
- 311 Hours of work reduced for boy under 18, window area increased.
- 312 Area of windows increased.
- 313 Affidavit procured for child under 16, child under 14 discharged, window area increased.
- 315 Floors scrubbed.
- 316 Child under 16 discharged, hours reduced for boys under 18, floors scrubbed.
- 317 Affidavit for boy under 16.
- 318 Area of windows increased.
- 320 Affidavit for child under 16, hours of work reduced for person under 18, floors scrubbed.
- 321 Affidavit for child under 16, hours of work reduced for persons under 18, floors scrubbed.
- 322 Affidavit for child under 16, hours of work reduced for persons under 18.
- 323 Affidavit for child under 16, floors scrubbed, child under 14 discharged.
- 324 Affidavit for child under 16, window area increased, better ventilation provided, floors scrubbed.
- 325 Hours reduced for persons under 18, window area increased, better ventilation provided, floors scrubbed.
- 326 Window area increased, separate closet for females.
- 327 Window area increased, floors scrubbed.
- 328 Floors scrubbed.
- 329 Window area increased.
- 330 Window area increased, windows opened before and after working hours, floors scrubbed.
- 332 Window area increased.
- 333 Affidavit for person under 16, window area increased.
- 334 Affidavit for person under 16, window area increased.
- 335 Window area increased.
- 336 Window area increased.
- 338 Window area increased, floor scrubbed.
- 340 Area of windows increased.
- 341 Area of windows increased.
- 342 Area of windows increased, floors scrubbed weekly.
- 344 Affidavit for person under 16, window area increased.
- 345 Floors scrubbed.
- 346 Height of work room increased or premises vacated, better ventilation provided.
- 347 Floors scrubbed.
- 348 Area of windows increased.
- 349 Height of work room increased or premises vacated, window area increased, floors scrubbed, sanitary conditions generally improved.

- 351 Affidavit for person under 16.
- 352 Affidavit filed for person under 16, window area increased, floors scrubbed.
- 353 Affidavit for person under 16, window area increased.
- 354 Affidavit for person under 16, window area increased.
- 355 Floor scrubbed, window area increased.
- 356 Affidavit for persons under 16.
- 358 Area of windows increased.
- 362 Floors scrubbed.
- 363 Area of windows increased, floors scrubbed.
- 364 Hours reduced for persons under 18, window area increased, separate closet for females, floors scrubbed weekly.
- 365 Window area increased, separate closet for females.
- 366 Windows fixed to open, room properly ventilated, floors scrubbed.
- 367 Floors scrubbed.
- 368 Windows opened before and after working hours, work room properly ventilated by shaft or fan, floors scrubbed.
- 369 Windows opened before and after working hours, floors scrubbed, separate closet for females.
- 370 Area of windows increased.
- 371 Area of windows increased.
- 372 Area of windows increased.
- 373 Area of windows increased.
- 374 Area of windows increased.
- 375 Area of windows increased.
- 376 Affidavit for person under 16, window area increased.
- 377 Hours reduced for persons under 18, window area increased.
- 378 Window area increased, an additional water closet, floors scrubbed.
- 379 Better means of ventilation.
- 380 Floors scrubbed, separate closet for females.
- 381 Affidavit for person under 16, hours reduced for person under 18, window area increased, floors scrubbed.
- 382 Affidavit filed for persons under 16, floor scrubbed, window area increased.
- 383 Floors scrubbed, separate closet for females, shop kept clean, windows opened before and after working hours.
- 384 Proper affidavit for persons under 16, floors scrubbed, hours reduced for persons under 18.
- 385 Floors scrubbed.
- 386 Windows opened before and after working hours or mechanical appliances for ventilation.
- 387 Area of windows increased, better means of ventilation.
- 389 Area of windows increased.
- 390 Area of windows increased.
- 391 Better means of ventilation.
- 392 Area of windows increased.
- 393 Area of windows increased.
- 394 Affidavit for person under 16, floor scrubbed.
- 395 Hours reduced for person under 18, area of windows increased.
- 396 Affidavit for person under 16, hours reduced for person under 18, floors scrubbed.
- 397 Affidavit for persons under 16, hours reduced for persons under 18, window area reduced.
- 398 Affidavit for person under 16, hours reduced for person under 18.
- 399 Affidavit for persons under 16, area windows increased.
- 401 Area of windows increased.
- 402 Affidavit for person under 16, window area increased, better means of ventilation.
- 403 Affidavit for person under 16, window area increased.
- 404 Area of windows increased.
- 405 Affidavit for person under 16, child under 14 discharged, separate closet for females.
- 406 Area of windows increased, separate closet for females.
- 407 Affidavit for person under 16, floor scrubbed.
- 408 Floor scrubbed.
- 409 Area of windows increased, separate closet for females.
- 410 Affidavit for person under 16, window area increased.
- 412 Affidavits for persons under 16, height of one of the work rooms increased, window area increased, better means of ventilation.
- 413 Area of windows increased, floors cleaned, renovation of place throughout.
- 414 Affidavits for persons under 16, separate water closet for females.
- 415 Area of windows increased, separate water closet for females.
- 417 Affidavit for person under 16, window area increased.
- 418 Window area increased, height of one of rooms increased or room vacated, floors scrubbed.
- 419 Area of windows increased.
- 420 Floors scrubbed.
- 421 Floors scrubbed.
- 422 Area of windows increased, floors scrubbed.
- 423 Area of windows increased, floors scrubbed.
- 425 Floors scrubbed, separate water closet for females.
- 427 Work room enlarged to contain 700 cubic feet air space or premises vacated, window area increased.
- 429 Affidavit for person under 16, window area increased.

- 431 Floor scrubbed.
 432 Area of windows increased.
 433 Area of two windows increased.
 434 Window area increased.
 436 Window area increased, tables dusted and floors swept daily, floors scrubbed weekly.
 437 Area of windows increased.
 439 Area of windows increased, floors scrubbed.
 441 Floors scrubbed.
 444 Separate closet for females.
 446 Window area increased, windows opened regularly before and after working hours.
 447 Area of windows increased.
 448 Area of windows increased.
 449 Area of windows increased.
 452 Floors scrubbed, separate water closet for females.
 453 Floors scrubbed.
 454 Area of windows increased, floors scrubbed.
 456 Affidavit procured for person under 16, floor scrubbed.
 457 Affidavit for person under 16, floor scrubbed.
 458 Affidavit for person under 16, child under 14 discharged, hours reduced for persons under 18, better means of ventilation, floors scrubbed.
 459 Floor scrubbed.
 460 Affidavit for person under 16, child under 14 discharged, hours reduced for person under 16, better means of ventilation, floors scrubbed.
 461 Affidavit for persons under 16.
 463 Affidavit for person under 16, window area increased.
 464 Area of windows increased, better means of ventilation, windows opened before and after working hours.
 465 Hours reduced for persons under 18.
 466 Height of work room increased or premises vacated, window area increased, better means of ventilation.
 467 Hours reduced for persons under 18, better means of ventilation, floors scrubbed, separate water closet for females.
 468 Hours reduced for persons under 18, better means of ventilation.
 470 Area of windows increased.
 474 Area of windows increased.
 476 Height of work room increased.
 477 Better means of ventilation.
 478 Better means of ventilation, tables dusted and floors swept daily, floors scrubbed weekly, transom made to open.
 479 Area of windows increased, floor scrubbed.
 481 Affidavit for child under 16, tables dusted, floors scrubbed.
 482 Window area increased.
 484 Separate closet for females.
 485 Affidavit for child under 16, child under 14 discharged.
 486 Window area increased.
 487 Window area increased.
 488 Hours of work reduced for person under 18.
 490 Window area increased.
 491 Window area increased.

CIGAR FACTORIES.

Classification of orders issued.	Number of orders.
Ordered:	
Area of windows increased	296
Floors scrubbed weekly	156
Tables and floors dusted and swept	24
To provide better means of ventilation.....	20
To vacate basement	27
Work room enlarged or premises vacated.....	5
Height of work room increased or premises vacated.....	40
To whitewash premises	1
Doors to living rooms permanently closed.....	14
Separate closets for sexes	34
Separate outside entrances	1
Cuspidors	3
Hours reduced for employees under 18	15
Affidavits procured for employees under 16.....	77
Children under 14 discharged	16
Total orders issued	729
Number of cigar factories inspected	492

The total number of orders issued to proprietors of cigar factories was 729, as shown above. Of this total number 296, or 40.6% were for increased window surface to conform to Sec. 3 of Ch. 79, Laws '99, which provides a double standard of window area, viz.: (a) each window must contain at least 12 square feet in area and (b) the entire area of window surface in each room must be at least 12 per cent. of the floor space in such room. One hundred and eighty orders, or 24.7%, were to enforce cleanliness, including the scrubbing of floors weekly and the daily dusting of work tables and floor sweeping (under Sec. 5, Ch. 97, L. '99); 20, or 2.7%, were orders issued under Sec. 4, Ch. 79, L. '99, for proper means of ventilation in work-rooms; 27 orders, or 3.7%, issued under Sec. 1, Ch. 79, L. '99, were to vacate basements and provide other premises to comply with law; 45 orders, or 6.2%, were to enlarge work-rooms under Sec. 3, Ch. 79, L. '99, either under the provision requiring each work-room to be at least 8 feet in height or the provision requiring each room to contain at least 700 cubic feet of air space; 14 orders, or 2% of the orders, were to close doors between shops and living rooms under Sec. 2, Ch. 232, L. '99; 34 orders, or 4.7%, were to provide separate dressing rooms and water closets for the different sexes (under Sec. 7, Ch. 79, L. '99); 15 orders, or 2%, were to reduce the number of hours of persons under 18 years and not to permit such persons to work to exceed 8 hours in any one day, or 48 hours a week (under Sec. 6, Ch. 79, L. '99); 77 orders, or 10.5%, were to procure affidavits for children under 16 years of age (under Sec. 2, Ch. 274, L. '99); 16 orders, or 2.2%, were to discharge children under 14 years, who had not filed a permit as provided by Ch. 274, L. '99. The remaining 5 orders, or .7%, were for separate outside entrance to whitewash premises (under Sec. 2, Ch. 232(L. '99), and to provide cuspidors (under Sec. 5, Ch. 79, L. '99).

The number of establishments inspected in Milwaukee was.....	280
Of this number those being conducted contrary to law were	246 or 87.9%
Number of establishments inspected outside of Milwaukee was....	212
Of this number those being conducted contrary to law were.....	164 or 77.4%
Number of establishments inspected in the state entire was.....	492
Of this number those being conducted contrary to law were.....	410 or 83.3%

TABLE I.—LEAF TOBACCO WAREHOUSES.

NAME.	In- dex.	BUILD- INGS.		PERSONS EM- PLOYED.			16 Number under years.
		Under 3 stor- ies in height.	3 or more stor- ies in height.	Males.	Females.	Totals.	
BRODHEAD, GREEN CO.							
Ed. McNair.....	1	1					
Ed. McNair.....	2	1		7	18	25	1
Totals.....		2		7	18	25	1
BROOKLYN, GREEN CO.							
Green J. L. & M. F.....	3	1		20	15	35	
CAMBRIDGE, DANE CO.							
Sutter Bros.....	4	1		40	20	60	7
DEERFIELD, DANE CO.							
Brickson, I. O.....	5	1		35		35	
Kleinfelter, H. G.....	6	1		30		30	1
Kleinfelter, H. G.....	7	1		25		25	2
Kleinfelter, H. G.....	8	1		7	33	40	4
Totals.....		4		97	33	130	7
EDGERTON, ROCK CO.							
Childs, H. W.....	9	1		25	35	60	7
Chuds, H. W.....	10	1					
Conway, Bros. & Co.....	11	1		50	30	80	1
Culton, C. L.....	12	1		12	63	75	
Culton, C. L.....	13	1		24	19	43	
Earle, T. H.....	14		1	55	45	100	6
Earle, T. B.....	15	1					
Ellingson, T. A.....	16	1		30		30	
Flagg, A. S.....	17	1		35		35	
Treyer, Eisenlohr.....	18	1		50	30	80	13
Hanson, O. G.....	19	1		1	2	3	
Havana, American Co.....	20	1					
Hopkins, E. C.....	21	1		12		12	
Hopkins, E. C.....	22	1					
Jerson, Andrew.....	23	1		33		33	1
Krebs, Wertheim & Scheffer.....	24	1		90	30	120	7
Krebs, Wertheim & Scheffer.....	25	1					
Levi, Blumenstiel & Co.....	26	1					
Lewis, Sylvester.....	27	1		35		35	1
McIntosh Bros.....	28	1		6	29	35	
McIntosh Bros.....	29	1		7	28	35	2
Perry, T. A.....	30	1					
Pomeroy & Pelton.....	31	1		5		5	
Pretzfeld & Co.....	32	1		10	30	40	
Schroeder & Bon.....	33	1		20	20	40	3
Schultz, M.....	34	1					
Scott, L. W., & Co.....	35	1		6	24	30	
Totals.....		26	1	506	385	891	41
EVANSVILLE, ROCK CO.							
Barnard & Wilder.....	36	1		20	20	40	
Brand, John & Co.....	37	1		35	45	80	1
Smith, Ed. E.....	38	1					
Smith Bros.....	39	1		14	16	30	
Totals.....		4		69	81	150	1
FOOTVILLE, ROCK CO.							
Owen & Pepper.....	40	1		5	10	15	

TABLE I.—LEAF TOBACCO WAREHOUSES.—Continued.

NAME.	In- dex.	BUILD- INGS.		PERSONS EMPLOYED.			No. under 16 years.
		Under 3 stor- ies in height.	3 or more stor- ies in height.	Males.	Females.	Totals.	
PT. ATKINSON, JEFFERSON CO.							
Culton, Chas. L.	41	1	.....	8	32	40	.....
JANESVILLE, ROCK CO.							
Barneer, F. S.	42	1	.....	20	30	50	5
Carle, L. B.	43	1	.....	25	50	75	.....
Carle, L. B.	44	1	.....	.....	.....	.....	.....
Conrad, W. B.	45	.....	1	3	10	13	.....
Earle, T. B.	46	1	.....	.....	.....	.....	.....
Erler, R. L.	47	1	.....	25	.....	23	.....
Fisher's Tobacco Warehouse	48	1	.....	15	25	100	1
Globe Trading Co.	49	1	.....	10	50	60	3
Greene, J. L. & M. F.	50	1	.....	15	30	45	1
Grund, Joseph	51	1	.....	3	17	20	.....
Heddles, S. H.	52	.....	1	.....	.....	.....	Idle.
Heddles, S. B.	53	1	.....	20	75	95	6
Marquess, J.	54	1	.....	75	50	125	5
Richardson, Burt	55	1	.....	2	3	5	.....
Rudolph, P. & Co.	56	1	.....	40	.....	40	.....
Soulman, John & Co.	57	1	.....	5	16	21	1
Soverhill, M. H.	58	1	.....	10	30	40	.....
Soverhill & Porter	59	1	.....	10	35	45	.....
Sutter Bros.	60	1	.....	4	26	30	5
Welch, T. E.	61	1	.....	13	29	42	.....
Totals	.....	18	2	355	476	831	27
LONDON, DANE CO.							
Flagg, A. S.	62	1	.....	32	28	60	.....
Flagg, A. S.	63	1	.....	.....	.....	.....	.....
Totals	.....	2	.....	32	28	60	.....
MADISON, DANE CO.							
American Tobacco Co.	64	1	.....	65	75	140	6
Barnard & Wilder	65	1	.....	12	33	45	.....
Baines, F. S.	66	1	.....	12	4	16	.....
Sutter Bros.	67	.....	1	12	40	52	.....
Totals	.....	3	1	101	152	253	10
MILTON, ROCK CO.							
Soverhill & Porter	68	1	.....	6	.....	6	.....
Soverhill & Porter	69	1	.....	7	18	25	1
Totals	.....	2	.....	13	18	31	1
MILTON JUNCTION, ROCK CO.							
Culton, Chas. L.	70	1	.....	7	28	35	1
Culton, Chas. L.	71	1	.....	2	.....	2	.....
Totals	.....	2	.....	9	28	37	1
MORRISONVILLE, DANE CO.							
Johnson, K. A.	72	1	.....	25	.....	25	1
McIntosh Bros.	73	1	.....	12	6	18	.....
Totals	.....	2	.....	37	6	43	1
MT. HOREB, DANE CO.							
Henesig, O. H.	74	1	.....	13	12	25	6
OREGON.							
Barnard, Wilder & Scofield	75	1	.....	15	17	32	.....

TABLE I.—LEAF TOBACCO WAREHOUSES.—Continued.

NAME.	In- dex.	BUILD- INGS.		PERSONS EM- PLOYED.			Number under 16 years.
		Under 3 stor- ies in height.	2 or more stor- ies in height.	Males.	Females.	Totals.	
ORFORDVILLE, ROCK CO.							
Carle, L. B.	76	1		5	21	26	
Peterson & Tollefstrud	77	1		12	10	22	
Totals		1		17	31	48	
SOLDIERS GROVE, CRAWFORD CO.							
Bekkedal, M. H.	78	1		10	55	65	
STOUGHTON, DANE CO.							
Cohen A. & Co.	79	1		46	9	55	9
Cullman Bros.	80	1		20	25	45	2
Gunderson, Osmund	81		1	3	42	45	6
Holton, John & Co.	82	1		12		12	2
Kittelsen, Levi & Son	83	1		2	3	25	4
Lee, O. C.	84	1		12	10	32	2
Mayer's, James Sons	85	1		30	15	45	1
Roe, O. K.	86	1		20	20	50	6
Rosenwald, E. & Bro.	87	1		20	38	58	1
Totals		8	1	205	162	367	33
SUN PRAIRIE, DANE CO.							
Dohan & Taft	88	1		20	30	50	1
Miller, Henry	89	1		12	33	45	3
Totals		2		32	63	95	4
VIROQUA, VERNON CO.							
Bekkedal, M. H.	90	1		65		65	
Eckert Fred	91	1		80		80	
Eckert, Fred	92	1		4	24	30	
Helgeson, O. H. & Co.	93	1		39	6	45	
Totals		4		188	32	220	
WESTBY, VERNON CO.							
Bekkedal, M. H.	94	1		70		70	
Eckert & Co.	95	1		7	39	46	
Goldberg Bros. & Co.	96	1		36	34	70	3
Hanson, H. & Co.	97	1		35		35	
Neprud, S. N.	98	1		40		40	
Totals		5		188	73	261	3
WHITEWATER, WALWORTH CO.							
Culton, Chas. L.	99	1		16	50	66	2

TABLE II.—LEAF TOBACCO.

The following is a summary of Table I. showing the number of firms and warehouses, the total number of employees, and the number of each class:

NAME OF CITY OR TOWN.	No. of firms.	No. of warehouses.	PERSONS EMPLOYED.			No. under 16 years.
			Males.	Females.	Totals.	
Brodhead.....	1	2	7	18	25	1
Brooklyn.....	1	1	10	15	35	.....
Cambridge.....	1	1	40	20	60	7
Deerfield.....	2	4	97	33	130	7
Edgerton.....	21	27	506	385	891	41
Evansville.....	4	4	69	81	150	1
Footville.....	1	1	5	10	15	.....
Ft. Atkinson.....	1	1	8	32	40	.....
Janesville.....	17	20	353	476	831	27
London.....	1	2	32	28	60	.....
Madison.....	4	4	101	152	253	10
Milton.....	1	2	13	14	31	1
Milton Junction.....	1	2	9	28	37	1
Morrisonville.....	2	2	37	6	43	1
Mt. Horeb.....	1	1	13	12	25	6
Oregon.....	1	1	15	17	32	.....
Orfordville.....	2	2	17	31	48	.....
Soldiers Grove.....	1	1	10	55	65	.....
Stoughton.....	9	9	235	132	367	33
Sun Prairie.....	2	2	32	63	95	4
Viroqua.....	3	4	188	32	220	.....
Westby.....	5	5	148	73	221	8
Whitewater.....	1	1	16	50	66	2
Totals.....	83	99	1,983	1,797	3,780	143

LEAF TOBACCO.

The following table shows the total number of employees, the number of males, females, and children under 16; also the percentages of each class with reference to the total in each of the tobacco centers named. The points included in other places below had less than 50 employees each:

LOCATION.	Total number employed.	MALE EMPLOYEES.		FEMALE EMPLOYEES.		EMPLOYEES UNDER 16 YEARS OF AGE.	
		Num-ber.	Per-cent.	Num-ber.	Per-cent.	Num-ber.	Per-cent.
Cambridge, Dane Co.	60	40	66.6	20	33.4	7	11.6
Deerfield, Dane Co.	130	97	74.6	33	25.4	7	5.4
Edgerton, Rock Co.	591	506	85.6	385	65.1	41	6.8
Evansville, Rock Co.	150	69	46	81	54	1	0.7
Janesville, Rock Co.	831	355	42.7	476	57.3	27	3.2
London, Dane Co.	69	32	46.4	28	40.6	.....	.....
Madison, Dane Co.	253	101	40	152	60	10	3.9
Soldiers Grove, Crawford Co.	65	10	15	55	85	.....	.....
Stoughton, Dane Co.	267	205	77	162	60.7	33	12.4
Sun Prairie, Dane Co.	95	32	33.7	63	66.3	4	4.2
Viroqua, Vernon Co.	220	188	85.4	32	14.6	.....	.....
Westby, Vernon Co.	261	188	72	73	28	3	1.2
Whitewater, Walworth Co. .	66	16	24.2	50	75.8	2	3
Other places	331	144	43.5	187	56.5	10	3
Totals	3,780	1,983	52.5	1,797	47.5	145	3.9

PERCENTAGE OF EMPLOYEES UNDER 16 WHO ARE SHOWN BY REPORTS OF INSPECTOR TO HAVE BEEN AT WORK AND FOR WHOM NO AFFIDAVITS HAD BEEN FILED AS PROVIDED BY SEC. 2, CH. 274, L. '99.

Percentage of children under 16 years of age to the total number of employees	3.9%
Percentage of firms employing children under 16 years of age.....	51.8%
Percentage of tobacco warehouses where children under 16 are employed	43.4%

It will be noted that in eight of the places given, embracing 56 establishments, no child labor is used, which brings the percentage down to 3.9%, as shown above. The percentage of those under 16 to the total number employed in those establishments where children are employed is 6.3%.

The number of establishments inspected was..... 99
Of this number those being conducted contrary to law were 76 or 76.8%

In the following list of 174 orders issued will be found index numbers which refer to numbers assigned (in Table I) to individual firms and corporations who operate the warehouses. The names and addresses being available by this reference number, they are here omitted.

As in the case of orders issued to cigar factories one expression has been used wherever possible to express the effect of several requirements, and wherever in one establishment there were several violations of the same nature one order only is here listed.

LIST OF ORDERS ISSUED.

- 1 Swing doors out.
- 3 Swing doors out; provide seats for females.
- 4 Affidavits; swing doors out.
- 5 Swing doors out; guard elevators.
- 6 Swing doors out; guard elevator shaft; affidavit; provide separate closets for females.
- 9 Swing doors out; ordered separate closet for female employees.
- 11 Affidavits; swing doors out; guard elevator shaft.
- 12 Swing doors out; guard elevator shaft on all floors.
- 13 Affidavits, swing doors out.
- 15 Swing doors out.
- 16 Swing doors out; guard elevator shaft, to both elevators.
- 17 Swing doors out.
- 18 Swing doors out.
- 19 Swing doors out; guard elevator shaft.
- 20 Swing doors out.
- 21 Swing doors out.
- 23 Affidavits; swing doors out; guard elevator shaft on 2d floor.
- 24 Swing doors out.
- 26 Swing doors out.
- 27 Affidavits; swing doors out; guard elevator shaft.
- 28 Swing doors out; provide separate closet for females; guard elevator.
- 30 Swing doors out.
- 31 Swing doors out.
- 32 Swing doors out; guard elevator shaft and provide separate closet for females.
- 33 Affidavits; swing doors out.
- 35 Swing doors out; guard elevator shaft on all floors and provide separate closet for females.
- 36 Swing doors out.
- 37 Affidavits; swing doors out.
- 40 Swing doors out.
- 41 Swing doors out; provide separate closet for females and also seats for female employees.
- 42 Affidavits; swing doors out.
- 45 Swing doors out.
- 47 Swing doors out.
- 48 Separate closets for females.
- 49 Affidavits; swing doors out.
- 50 Swing doors out; separate closet for females.
- 51 Swing doors out; guard elevator shaft and provide seats for females.
- 52 Affidavits; swing doors out.
- 54 Affidavits; swing doors out; guard elevator and put rails on sides of stairs; provide two dozen seats for female employees.
- 55 Swing doors out; guard elevator shaft and provide separate closets for female employees.
- 56 Swing door out.
- 57 Affidavits; swing doors out; guard elevator shaft.
- 59 Swing door out; separate closet for females.
- 60 Affidavits; swing doors out.
- 61 Swing doors out; separate closet for female employees.
- 62 Swing doors out; provide seats for female employees.
- 63 Affidavits; swing doors out.
- 65 Swing doors out; guard elevator.
- 66 Swing doors out; guard elevator; provide separate closets for males and females, and seats for female employees; railing on stairs.
- 67 Affidavits; swing doors out.

- 68 Swing doors out.
 70 Affidavits; swing doors out; guard elevator; provide closets for females; seats for females.
 72 Affidavits; swing doors out.
 74 Affidavits; swing doors out; guard elevator; provide separate closets for males and females; provide seats for females.
 75 Swing doors out.
 77 Swing door out; guard elevator; provide separate closet for males and females; provide seats for females.
 78 Swing doors out.
 79 Affidavits; swing doors out; separate closets for males and females; provide seats for females.
 80 Affidavits; swing doors out; provide separate closets for males and females.
 82 Swing doors out; guard elevator shaft and provide closets.
 83 Swing doors out; provide seats for girls; provide separate closets for males and females.
 84 Swing doors out; provide seats for female employees.
 85 Affidavits; swing door out; provide seats for females; separate closets for males and females.
 86 Swing doors out; provide seats for female employees; provide closet for females.
 87 Affidavits; swing door out; guard elevator; provide separate closets for female employees.
 88 Affidavits; swing doors out; guard elevator; provide seats for females.
 89 Affidavits; swing doors out; guard elevator; provide seats for females.
 90 Swing doors out; guard elevator.
 91 Swing doors out; provide seats for female employees.
 93 Swing doors out.
 94 Swing doors out; guard elevator shaft.
 95 Swing doors out.
 96 Swing door out; guard elevator; provide seats for females.
 97 Guard elevator; swing doors out.
 98 Swing doors out; guard elevator.
 99 Affidavits; swing doors out; provide seats for females.

LEAF TOBACCO WAREHOUSE.

Summary of orders issued showing number and percentage of each class.

Classification.	Number of orders.	Percentage.
Ordered:		
Doors to swing out.....	76	43.7
Elevator shafts guarded	29	16.7
Affidavits for children under 16.....	26	15
Separate closets for the sexes.....	24	13.8
Seats provided for females	17	9.7
Stairways guarded by railings	2	1.1
	174	100%

SWEAT SHOPS.

CHAPTER 232, LAWS OF 1899.

(Approved April 20, 1899.)

AN ACT to provide for the preservation of public health.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Purposes of the act.

Rooms not to be used for manufacturing wearing apparel, etc., or cigars, cigarettes, or tobacco (except by immediate family living therein).

Work room must not be connected with living or sleeping rooms or used for living or sleeping purposes.

Must not contain beds, etc., or cooking utensils.

Must have direct entrance and enough heat, light and air by mechanical means if necessary.

Each employe must have 250 cubic feet air space during day and 400 at night.

Must have suitable closets for each sex.

Inside closets must have proper plumbing.

Provision for additional closets.

Section 1. No dwelling or building, or any room or apartment of itself, in, or connected with any tenement or dwelling or other building, shall be used except by the immediate members of the family living therein, for carrying on any process of making any kind of wearing apparel or goods for male or female wear, use, or adornment, or for the manufacture of cigars, cigarettes, or tobacco goods in any form, when such wearing apparel or other goods are to be exposed for sale or to be sold by manufacturers, wholesalers or jobbers, to the trade or at retail, unless such room or apartment shall have been made to conform to the requirements and regulations provided for in this act.

Section 2. Each such room or apartment used for purposes aforesaid, shall be regarded as workshop or factory, and shall be separate from and have no door, window or other opening into any living or sleeping room of any tenement or dwelling, and no such workshop or factory shall be used at any time for living or sleeping purposes, and shall contain no bed, bedding, cooking or other utensils, except what is required to carry on the work therein, and every such shop or factory shall have an entrance from the outside direct, and if above the first floor, shall have a separate and distinct stairway leading thereto, and every such work shop or factory shall be well and sufficiently lighted, heated and ventilated by ordinary, or, if necessary, by mechanical appliance, and shall provide for each person employed therein, no less than two hundred and fifty cubic feet of air space in daytime and four hundred cubic feet at night, and shall have suitable closet arrangements for each sex employed therein, as follows: Where there are ten or more persons, and three or more to the number of twenty, are of either sex, a separate and distinct water closet, either inside the building, with adequate plumbing connections, or on the outside at least twenty feet from the building, shall be provided for each sex; when the number employed is more than twenty-five of either sex, there shall be provided an additional water closet for such sex up to the number of fifty persons, and above that number in the same ratio, and all such closets shall be kept strictly and exclusively for the use of the employes and employer or employers of such work shop or factory; provided, that where more than one room is used under the direction of one employer, all such rooms are to be regarded as one shop or factory, and every such work shop or factory shall be kept in a clean and wholesome condition, all stairways and the premises within a radius of thirty feet, shall be kept clean, and closets shall be regularly disinfected and supplied with disinfectants, and the commis-

Shops, stairways, etc., to kept clean.

Closets to be disinfected and supplied with disinfectants.

Powers, etc.

Work must not be given out to persons to make goods named in Sec. 1, after notice from commissioners or inspectors that Sec. 2 has not been complied with.

Record must be kept by those giving out work.

Goods named in Sec. 1, should not be handled in any manner unless made under conditions provided by this act.

Penalty for violating this act, fine \$50 to \$100 for each offense or imprisonment 30 to 60 days or both.

Where accused is acquitted or indigent, costs to be paid from county treasury.

sioner of labor and factory inspectors may require all necessary changes, or any process of cleaning, painting or whitewashing which they may deem essential to assure absolute freedom from obnoxious odor, filth, vermin, decaying matters, or any condition liable to impair health or breed infectious or contagious diseases; he shall prevent the operation of such shops or factories that do not conform to the provisions of this act, and cause the arrest and prosecution of the person or persons operating the same.

Section 3. No person, for himself or for any other person, firm or corporation, shall give out work to or contract with, any other person to perform such work necessary to make such goods mentioned in section 1, after having received notice from the commissioner of labor or factory inspectors that said latter person has not complied with the provisions of section 2 of this act, which notice shall remain in force, until said person has complied with this law, of which notice must be given to the employer by the commissioner of labor or factory inspectors.

Section 4. Every such person, firm or corporation heretofore mentioned, shall obtain and keep a record of all persons to whom work is given out or contracted for, including their names and addresses, which record shall be opened to the inspection of the commissioner of labor or the factory inspectors when called for.

Section 5. No person, firm or corporation shall receive, handle or convey to others, or sell, hold in stock or expose for sale, any goods mentioned in section 1, unless made under the sanitary conditions provided for and prescribed in this act; but this act shall not include the making of garments or other goods, by any person for another by personal order, and when received for wear or use direct from maker's hands, and all violations of the provisions of this act, shall be prosecuted by any of the factory inspectors with the advice and consent of the commissioner of labor.

Section 6. Any person, firm or corporation who shall violate any of the provisions of this act, shall upon conviction, thereof, be fined in any sum not less than fifty dollars, nor more than one hundred dollars for each offense, or imprisonment not less than thirty, nor more than sixty days; or both; and in all prosecutions brought by or under the direction of the commissioner of labor for the violation of this act, he shall not be held to give security for costs, or adjudged to pay any costs, but in all cases where the accused be acquitted, or is found to be indigent, the costs shall be paid out of the county treasury of the county in which the proceedings are brought, the same as the costs in all other cases of misdemeanor.

Section 7. This act shall take effect and be in force from and after its passage and publication.

SWEAT SHOPS.

The legislation in Wisconsin on this subject was timely, inasmuch as its effect upon the evils aimed at is rather preventive in its nature than curative.

Public sentiment in this state, which resulted in the passage of the act known as the sweat shop law, Chapter 232, Laws 1899, was created by the conditions of the sweating system prevailing in large cities of other states, notably in New York, Chicago and Boston.

These conditions, which the legislation elsewhere has endeavored to change, have been often firmly fixed, whereas in Wisconsin the legislation has antedated and tends largely to prevent their existence.

As the last legislature passed the first Wisconsin law on this subject it is appropriate that the "sweat shop" or "sweating system," as it exists in other states, should be described here. As the manufacture of clothing is involved so largely in the system as to absorb the attention, no other occupation need be now considered. Every cause tending to perpetuate the system is actively at work in this trade. Based upon the figures given in the report of the special congressional committee of 1893, it may be observed that the sale of ready made clothing during the past 35 years has increased from 25% of the entire clothing supply in 1865, to 75% at present, and it is during this period that the "sweating system" has developed.

SWEAT SHOP SYSTEM DESCRIBED.

The "manufacturer" (so-called) of clothing, i. e., the one who marks the finished garment as of his make, causes the material to be cut, and those for each garment bunched together. The making is frequently let out by contract to the lowest bidder, generally to jobbers or contractors, who, when they are awarded the work, receive the materials for many thousands of garments.

This first contractor has his separate place of business, is generally an independent operator and often has some particular specialty, such as the making of vests, coats, cloaks, etc., or some special size or finish of either.

Often the first contractor lives in a different city or state from that in which the goods are cut and delivered to him. Thus a complete suit of clothes purchased in one city may have been partly made up in various cities, the worth on each portion of the suit having been contracted for at the particular place where the labor conditions make it possible for the lowest bid to be made.

The knowledge of the owner of the materials as to the details of the work often ceases entirely when he turns them over to the contractor. The advantage of this plan obviously is that the contractor is financially responsible and, by taking large lots of goods, relieves the wholesaler of the annoyance of doing business with a great number of small concerns whose premises may be such as to conflict with the laws relating to health. The contractor either has his own factories where the work is done under his personal supervision or re-lets the work to sub-contractors, for whose proper performance of the work he is responsible, and as to whose responsibility he has special means of knowing. The difference between the amount the first contractor receives for making the garments and the amount he pays to his employes, or to the sub-contractors, is said to be "sweated" from the earnings of the latter. The magnitude of the business is such that the sub-contractor or employe who works for a piece-price is not readily accessible to the manufacturer or owner of the materials who refuses to have dealings with anyone regarding whose responsibility there may be a question.

The sub-contractor in turn often re-lets to others, and each profit is said to be "sweated" from the one employed. The lowest step in the system is the tenement work shop, and the rule is that here the conditions are intolerable. The profits of the head of the tenement work room, added to the profits of the first contractor and of the sub-contractors, is now said to be "sweated" from the worker who is often a newly arrived immigrant and ignorant of the labor conditions in this country, and who works for less wages than those in regular shops, often as low as 40c per day on the piece-work plan.

From the wholesale Manufacturers marketing millions of dol-

lars' worth of goods annually through the middlemen to the home tenement worker, the steps are steadily downward,—of decreasing prominence and respectability in a business way, of decreasing comfort and compensation, the profit of each one of the line above, the wretch who toils at the bottom being "sweated" from the one next below him."—Cong. Com. Report, 1893.

The typical sweat shop is exceedingly filthy and possesses a stench which is unbearable to those unaccustomed to it. Men, women and children are over-crowded in a small room with poor light and foul air. The work room is used for cooking, living and sleeping concurrently by the family and boarders. Exhausted workers and children sleep upon bales of material and of finished garments. In some cases no other beds have been found upon the premises. The shops are generally in the most squalid portions of the city, densely populated with the most wretched and helpless people.

The hours of work are limited only by the endurance of the worker. Contagious diseases thrive by reason of total neglect of ordinary precautions for health, which not only imperils the persons employed, but to the public, as infectious diseases are spread by the sale of garments made by those suffering therefrom.

Separate water closets for the sexes are not provided and such closets as are furnished are not disinfected and are unsanitary.

INSPECTIONS OF 79 WORK SHOPS IN THE CITY OF MILWAUKEE
PRODUCING WEARING APPAREL ONLY, AND WHICH ARE EM-
BRACED WITHIN THE SWEAT SHOP LAW. (CH. 232, LAWS
OF 1899.)

(Shops where one or more of the immediate family only are employed are not affected by the law, and the results of inspection are elsewhere shown.)

Unless otherwise shown in the following reports the inspections show that 10 hours constitute a day's work; that no employes under 16 years of age were required to work before 6 a. m. or after 9 p. m., and that no power was used.

The total number of persons employed in these shops was 1,050, of which 268 were males, 782 females, 107 were under 16, and 15 under 14 years of age.

A. Boehm Mfg. Co., 720 12th St., Cloaks and Jackets.—Two story frame, owned by Peckman, 14th and Chestnut Sts. Goods sold direct at retail. Fourteen employes, 2 male, 12 female. One closet only, water connected; condition fair. Work room, 1st floor, 30x60x12, 3 windows and store front; not used as or connected with living or sleeping rooms; contains no bed, etc., or cooking utensils; free from vermin and stench; enough heat, light and air; has 1,542 cubic feet air space for each person; direct entrance; needs no changing or renovating; general condition fair. Ordered additional closet.

M. S. Bullard, 1222 Vliet St., Men's Jackets.—Two story building, owned by H. L. Spengler, 1815 Chestnut St. Goods made for and wholesaled by Landauer & Co. Two employes,—1 male, 1 female; no regular hours; one closet outside; condition poor. Basement work room, 14x15x8½; is also used as barber shop; is connected with living room, but not used for living or sleeping purposes; no vermin or stench; contains no bedding or cooking utensils; properly lighted, heated and ventilated; has 447 cubic feet air space for each person; needs no changing or renovating. General conditions good.

M. Schwanda, 1024 19th St., Men's Coats.—One story frame, owned by occupant. Goods made for and wholesaled by Friend Bros. & Co. Seven employes: 2 male, 5 female; none under 16; 1 closet, regularly disinfected; condition good. Dwelling in front; shop in rear, 20x40x8½; 8 windows, 2' 4"x5; not used as or connected with living or sleeping rooms; contains no bedding, etc., or cooking utensils; entered direct; enough light, heat and air; has 945 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench; general conditions good.

Barnett Goldstein, 1705 Vliet St., Men's Coats.—Two story frame; owner's agent, J. C. Wambald, 64 L. & T. Bldg. Goods manufactured for and wholesaled by D. Adler & Sons Cloak Co.

Six employes: 5 male, 1 female; 1 under 16; no affidavits kept as provided by law; one closet, in basement, water connections, (which at time of inspection did not work). Sewing rooms 2d fl.; work room 1st fl. 24x60x13, six windows and store front; not used for, or connected with living, or sleeping rooms; contains no bedding, or cooking utensils; properly lighted, heated, and ventilated; has 3,120 cubic feet air space for each person; entered direct from street; free from vermin, and obnoxious odors; no change or renovating needed. General condition fair.

Ordered water connections for closets repaired and affidavit for 1 under 16.

B. Kauffman, 610 11th St., Men's Coats.—One story frame; owned by occupant; entire building used as shop. Goods manufactured for, and wholesaled by L. A. Shakman & Co., and Aarons Marks & Co. Fifteen employes, six male, nine female; one under 16, none under 14. No affidavits as provided by law; one closet only, water connection; sanitary condition good. Building entire used as work room; 20x60x9, 24 windows 2 ft. 4 in. by 5 ft.; not used as, or connected with living or sleeping room; contains no bedding, or cooking utensils; properly lighted, heated and ventilated; has 720 cu. ft. air space for each person; separate outside door; free from vermin and obnoxious odors, no repairing or renovating needed; general condition good. Ordered affidavit for employe under 16, and an additional closet.

Abraham Devidorf, 502 Fifth St., Men's Coats.—Two story frame, owned by Brand Stove Co., 295 6th St. Goods manufactured for, and wholesaled by D. Adler & Son's Clothing Co.: 17 employes: 9 male, 8 female; one under 16; two outside closets, water connections, sanitation good. Dwelling 2d fl.; two shop rooms 1st fl. 16x32x9 with 6, 3x6 ft. windows, and 14x14x9 with 3, 3x6 windows; not used as living or sleeping rooms, but connected by door way with kitchen; contains no bedding, or cooking utensils; is free from vermin and obnoxious odors; enough light, heat and air; has 375 cu. ft. air space for each person; separate outside entrances; needs changing and renovating. General conditions poor; orders would have been

given to have premises cleaned up and repaired, but occupant at time of inspection was building anew shop, which was being constructed according to law and which would be completed in 30 days. Ordered affidavit for employe under 16.

Western Overall Co., 553-5 E. Water St., Overalls and Jackets.—One story brick, owned by G. Patch 317 E. Water; entirely occupied as factory. Goods wholesaled by makers; electric power. Eight employes: 4 male, 4 female; none under 16; nine hours daily work; one closet only, water connections; conditions fair. Shop 50x60x12; not used as, or connected with living, or sleeping rooms; contains no bedding, or cooking utensils; direct outside entrance; properly lighted, heated and ventilated; has 4,500 cu. ft. air space for each person; free from vermin, and obnoxious odors; needs no changing or renovating. General condition good.

Wm. Kann, 1003 21st St., Men's Coats.—One story frame, owned by occupant; entirely used as shop. Goods manufactured for, and wholesaled by D. Adler & Son's Clothing Co. Twenty-seven employes: 4 male, 23 female; seven under 16, 1 under 14. No affidavits as provided by law; 2 closets, one in building, one outside, water connections; condition good. Shop, 38x20x9, and 16x20x9 with 18 windows 2 ft. 4 in. x 5½ ft.; not used as, or connected with living or sleeping rooms; contains no

bedding or cooking utensils; direct outside entrances; sufficiently lighted, heated and ventilated; has 341 cu. ft. air space for each person; needs no changing or renovating; free from vermin, and obnoxious odors. General conditions good. Ordered employe under 14 discharged, and affidavits for employes under 16.

H. Alberts, 153 Burleigh St., Men's Coats.—Two story frame. Owners agent is Geo. Dietrich (next door.) Goods manufactured for, and wholesaled by Friend Bros. & Co., 8 employes: 4 male, 4 female; one under 16, none under 14. Closets for both sexes, water connections, sanitation good. Dwelling 2d. fl.; shop, 2 rooms 1st fl., 18x24x10, lighted by store front, and 18x20x10 lighted by 3 windows; are not used

as living or sleeping rooms (but are connected with upstairs dwelling rooms by door through hall); contains no bedding or cooking utensils; entered direct from outside, 3 doors; enough heat, light and air; has 990 cu. ft. air space for each person; needs no changes or renovating; is free from vermin and obnoxious odors; general condition good. Affidavit ordered for employe under 16.

A. Kellermann, 1024 Richards St., Overcoats.—One story frame, owned by occupant, entirely used as shop. Goods manufactured for and wholesaled by Friend Bros. & Co. Twenty-seven employes: 6 male, 21 female; 3 under 16, none under 14. Outside closets for both sexes; regularly disinfected, condition good. Shop, 20x43x9 ft., with 16 windows 2 ft. 4 in. x 5 ft.; not used for, or connected with living or sleeping rooms; contains no bedding or cooking utensils; outside entrances; sufficiently lighted, heated and ventilated; has 288 cu. ft. air space for each person; free from vermin and obnoxious odors; no renovating or repairing needed. Conditions generally good. Affidavits ordered for 3 employes under 16.

Regina Mfg. Co., 501 Broadway, Ladies' Wrappers.—Occupy 1 room in annex to Montgomery building. Goods wholesaled by makers; steam power from building. Seventeen employes: 2 male, 15 female; none under 16; separate closets for sexes being put in at time of inspection. Shop 48x60x10 with 8 windows 4½x6½; not used for, or connected with living or sleeping room; contains no bedding or cooking utensils; enough heat, light and air; has 1,650 cu. ft. air space for each person; out stairway; door swings out; no changes or renovation needed; free from vermin or stench. General conditions excellent.

Fred. Schulz, Jr., 767 12th St., Men's Coats.—One story frame, owned by occupant. Goods manufactured for, and wholesaled by Friend Bros. & Co. and L. A. Shakman & Co. Ten employes: 3 male, 7 female; 2 under 16, (no affidavits being kept). Outside closets separate for sexes, regularly disinfected; sanitation good. Entire building used as shop, one room, 24x24x8ft.; not used as, or connected with living or sleeping rooms; contains no bedding or cooking utensils; en-

tered directly from outside, door swings in; sufficiently lighted, heated and ventilated; has 460 cu. ft. air space for each person; needs no changing or renovating; is free from vermin, and obnoxious odors; conditions generally good. Ordered affidavits for 2 under 16.

Geo. Furhman, 550 12th St., Men's Coats.—Two story frame, owned by occupant. Goods manufactured for, and wholesaled by L. A. Shakman & Co. Two employes: 1 male, 1 female, both over 16; no regular hours; one family closet, in basement, water connections, sanitation good. Dwelling 2d fl. Shop 1st floor, 14x18x10, with 5 windows $2\frac{1}{2} \times 5\frac{1}{2}$ ft.; not used for living or sleeping purposes, but has door opening to living room on north; contains no bedding or cooking utensils; direct entrance; properly lighted, heated and ventilated; has 1,260 cu. ft. air space for each person; free from vermin and obnoxious odors; needs no changing or renovating. General conditions good.

Mrs. M. Braun, 690 12th St., Men's Shirts.—Two story frame, owned by occupant. Goods manufactured for, and wholesaled by Cohen Bros. Two female employes both over 16; no regular hours. Family closet in basement; water connections; sanitation good. Barber shop 1st fl.; dwelling 2d fl. of which one room is shop, 13x16x $8\frac{1}{2}$, 2 windows, 2 ft. 4 in. x $5\frac{1}{2}$; not used for living or sleeping room, but is connected therewith; contains a cook stove; has separate outside stairway; is sufficiently lighted, heated and ventilated; has 884 cu. ft. air space for each person; free from vermin and obnoxious odors; needs no changes or renovation. General conditions good.

Frank Porkorney, 467 16th St. (rear), Men's Coats.—Two story frame, owned by occupant. Goods manufactured for, and wholesaled by D. Adler & Sons Clo. Co. (who keeps record provided by law). Twenty-seven employes: 7 male, 20 female; 6 under 16, 1 under 14. Separate closets for different sexes, water connections, sanitation good. Shop occupies 2d fl., 22x50 x9 ft. with 18 windows 2' 4"x5 ft.; door swings in; one outside stairway; not used as, or connected with living or sleeping rooms; contains no bedding or cooking utensils; properly lighted, heated and ventilated; has 366 cubic feet air space for

each person; needs no changes or renovation; free from vermin, and obnoxious odors. General condition good. Ordered affidavits for 6 girls under 16, and a girl under 14 discharged.

Geo. Geer, 2120 Galena St., Men's Vests.—One and one-half story and basement frame, owned by Theo. Housman, 695 28th street. Goods manufactured for and wholesaled by D. Adler & Sons Clo. Co. Fifteen employes: 4 male, 11 female; (1 under 16; no affidavit). Two closets, one in basement, on 1st fl.; sanitation all right. Shop in basement, 22x36x7½, 5 windows, 2.4'x3, and windows in double doors; not used as, but has stairs leading to living room; contains no bedding, or cooking utensils; not well lighted; has 397 cubic feet air space for each person; more ventilation needed; free from vermin. General conditions fair. Ordered more windows, also front door repaired, and affidavit for employe under 16.

Jacob Gans, 2410 Cold Spring Ave., Men's Clothing.—One and one-half story and basement, frame, owned by occupant. Goods manufactured for and wholesaled by D. Adler & Sons Clo. Co. Twenty-one employes: 3 male, 18 females, (1 under 16). Separate closets for sexes; water connections, sanitation good. Workshop, basement, 22x45x9 ft.; 14 windows, 21½x3 ft.; not used for living or sleeping room, but connected therewith by stairs. Outside entrance; doors open in; sufficiently lighted, heated and ventilated; has 424 cubic feet air space for each person; contains no bedding, or cooking utensils; needs no changing or renovation; free from vermin and obnoxious odors. General condition good. Ordered affidavit for 1 girl under 16.

M. Porkorney 2505 Galena St., Men's Suits.—Two story frame, owned by A. Halaska, same address. Goods manufactured for and wholesaled by D. Adler & Sons Clo. Co. Sixteen employes: 5 male, 11 female; all over 16. Two closets, in basement, separate for sexes, water connection, sanitation good. Dwelling 2d fl., work room 1st fl. 22x44x9, 12 windows 2 ft. 4'x 5 ft., and 1 window 1½x3; not used for, or connected with living, or sleeping rooms; contains no bedding, or cooking utensils; entered direct from outside through hall; doors swing in; sufficiently lighted, heated and ventilated; has 545 cubic feet air

space for each person; needs no changing, or renovation; free from vermin and obnoxious odors. General condition good.

Joe Rudolph, 621 19th St., Men's Overcoats.—Two story frame, owned by occupant. Goods made for, and wholesaled by D. Adler & Sons Clo. Co. Seventeen employes: 5 male, 12 female; 1 under 16. One closet for females; water connection, sanitation good; men use house closet adjoining. Shop occupies all upper fl., 1 room 24x48x9, 16 windows, 2 ft. 2"x5 ft.; not used for, or connected with living, or sleeping rooms; contains no bedding or cooking utensils; separated stairways; doors swing in; sufficiently lighted, heated and ventilated; has 609 cubic feet air space for each person; needs no changes or renovation; free from vermin and offensive odors. General condition good. Ordered affidavit for employe under 16.

Anton Kolman, 1332 Vliet St., Men's Overcoats.—Two story frame, owned by occupant. Goods manufactured for, and wholesaled by D. Adler & Sons Clo. Co. Twenty-two employes: 7 male, 15 female; 2 under 16; no affidavits as provided by law; 2 closets, separate, in fair condition. Shop occupies all 1st fl. 2 rooms, 20x45x9, with 10 windows 2' 4"x5 and 15x30x9, with 3 windows 2' 4"x5; not used for, or connected with living or sleeping rooms; direct outside doors swinging in; contains no bedding or cooking utensils; sufficiently lighted, heated and ventilated; has 370 cubic feet air space for each person; needs no changes or renovation; free from vermin and obnoxious odors. General condition good. Ordered affidavits for 2 girls under 16.

L. Densky, 1520 Vliet St., Men's Overcoats.—One story frame, owned by occupant. Goods manufactured for, and wholesaled by D. Adler & Sons Clo. Co. Sixteen employes: 7 male, 9 female; all over 16. Only one closet provided; sanitation good. Shop entire fl., 2 rooms 22x26x9 ft, 9 windows 2 ft. 4 in. x 5 ft.; and 14x22x9 ft., 3 windows 2 ft. 4 in. x 5 ft.; not used for, or connected with living or sleeping rooms; free from vermin and stench; contains no bedding or cooking utensils; sufficiently lighted, heated and ventilated; has 500 cubic

feet air space for each person; 2 doors, direct, swing in; no changes or renovation needed. General condition good. Ordered another closet.

Anton Shiniak, 760 18th St., Men's Overcoats.—Two story frame, owned by occupant. Goods manufacture for, and wholesaled by D. Adler & Sons Clo. Co. Twenty-two employees: 5 male, 7 female, 4 under 16, (no affidavits). Two outside closets, water connections, sanitation good. Shop entire 1st fl., 1 room 22x42x10 ft, 12 windows 2' 4"x6 ft; not used for, or connected with living or sleeping rooms; contains no bedding or cooking utensils; sufficiently lighted, heated and ventilated; has 420 cubic feet air space for each person; free from vermin and stench; no changes, or renovation needed; entrances direct 2 doors swing in. General condition good. Ordered affidavits for 4 employees under 16.

A. Sandian, 1344 10th St., Men's Coats.—One story frame, owned by occupant. Goods manufactured for, and wholesaled by Friend Bros. & Co. Four employees: 1 male, 3 female, all over 16. One closet, outside, sanitation good. Shop room in rear of dwelling, 16x24x8; 9 windows, 2' 4"x4 ft.; not used for, but connected with living, and sleeping rooms by door, kept closed; contains no bedding, or cooking utensils; direct door outside; sufficiently lighted, heated and ventilated; has 768 cubic feet air space for each person; no changes or renovation needed; free from vermin and stench. General condition good.

J. Kirschmeyer, 1509 7th St., Men's Vests.—Two story and base brick, owned by occupant. Goods manufactured for, and wholesaled by Friend Bros. & Co. Twenty-five employees: 4 male, 21 female; 5 under 16 (no affidavits); one outside family closet, sanitation good. Shop all of basement, 2 rooms, 22x50 x9 with ten windows and 22x14x9 ft. with 2 windows 2½x4 ft.; not used as, or connected with living or sleeping rooms (which are above); contains no bedding or cooking utensils; sufficiently lighted, heated and ventilated; has 506 cubic feet air space for each person; direct entrance; needs no changing or renovation; free from vermin and stench. General condition

good. Ordered affidavits for employes under 16 and additional closet.

Aug. Wurl, 1063 11th St., Men's Coats.—One story frame, owned by occupant. Goods manufactured for and wholesaled by Friend Bros. & Co. Thirty-one employes: 6 male, 25 female, 3 under 16, 2 under 14. Three closets in basements, separate for sexes, sanitation good. Entire building used as shop; 1 room, 24x46x9 ft, 22 windows 2' 2"x 5½ ft.; not used as or connected with living or sleeping rooms; contains no building or cooking utensils; direct entrance; sufficiently lighted, heated and ventilated; has 320 cubic feet air space for each person; needs no changing, or renovation; free from vermin and stench. General conditions good. Ordered discharge of 2 girls under 14, and affidavits for 3 others under 16.

J. Cerny, 616 18th St., Men's Coats.—One story frame, owned by occupant. Goods made for and wholesaled by Friend Bros. & Co. Five employes: 1 male, 4 female, 1 under 16 (no affidavit). One closet for family; sanitation good. Shop occupies entire building, 1 room, 28x18x9, 12 windows 2½x 5½ ft.; not used as or connected with living or sleeping rooms; contains no bedding, or cooking utensils; direct entrance; sufficiently lighted, heated and ventilated; has 907 cubic feet air space for each person; needs no changes, or renovation; free from vermin and stench. General condition good. Ordered affidavit for employe under 16.

F. H. Schulz, 765 12th St., Men's Coats.—One story frame, owned by occupant. Goods manufactured for and wholesaled by Friend Bros. & Co. Nine employes: 2 male, 7 female, 1 under 16, (no affidavit). Only 1 closet, outside, disinfected; sanitation good. Workshop, entire building, 1 room, 22x30x9, 9 windows, 2' 2"x5 ft.; not used as or connected with living or sleeping rooms; contains no bedding, or cooking utensils; direct entrance; sufficiently lighted, heated and ventilated; has 660 cubic feet air space for each person; needs no changes, or renovation; free from vermin and stench. General condition good. Ordered affidavit for employe under 16.

J. Rosenberg, 826 Garfield Ave., Men's Coats.—Two story frame, owner residing 394 21st Ave. Goods manufactured for and wholesaled by Friend Bros. & Co. Twelve employees: 3 male, 9 female, all over 16; 2 closets in basement, water connections, sanitation good. Shop entire 1st fl., 2 rooms, 13x16x9, 2 windows 2½x5½ and 18x24x9, all glass store front; not used as, but connected with dwelling rooms by door kept closed; contains no bedding or cooking utensils; direct entrance; sufficiently lighted, heated and ventilated; needs no changing or renovation; free from vermin and stench. General condition good.

Frank Sladek, 1437 Tomah St., Overcoats.—One story and basement, frame, owned by occupant. Goods manufactured for, and wholesaled by D. Adler & Sons Clo. Co. Eleven employees: 3 male, 8 female, 2 under 16 (no affidavit kept). Only 1 closet, outside, sanitation all right. Shop entire upper fl., 1 room, 18x22x9, 10 windows 2' 2"x5 ft.; not used as or connected with living or sleeping rooms; contains no bedding or cooking utensils; direct entrance; sufficiently lighted, heated and ventilated; has 324 cubic feet of air space for each person; needs no changing, or renovation; free from vermin and stench. General condition good. Ordered and additional closet and affidavits for employees under 16.

Mrs. Amelia Swetzer, Cor. Davis and 9th Sts., Men's Clothing—Two story frame, owned by H. Dieven—N. Water St. Goods manufactured for and wholesaled by Henry Apple. Three employees: female, all over 16. One family closet, outside, sanitation fair. Work shop, entire 2d floor, 1 room 24x40x8 ft, 9 windows 2' 4"x4½ ft.; not used as living, or sleeping rooms, but connected with kitchen by stairs; contains no bedding or cooking utensils; entrance only from kitchen; sufficiently lighted, heated, and ventilated; has 2,820 cubic feet air space for each person; needs no changes or renovation; free from vermin and stench. General condition fair.

A. G. Christman, 605 10th St., Men's Vests.—One story frame, owned by occupant. Goods manufactured for and wholesaled by Friend Bros. & Co. and D. Adler & Sons Clo. Co.,

Milwaukee, and Hart, Schaffner & Marx, Chicago. Twenty employes: 3 male, 17 female, all over 16, nine hours daily; 2 closets, regularly disinfected, sanitation good. Shops entire building, 1 room 20x55x9 ft., 20 windows 3x5 ft. each; not used as or connected with living, or sleeping rooms; contains no building or cooking utensils; direct entrance; sufficiently lighted, heated and ventilated; has 495 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. General condition good.

H. Otto, 612 24½ St., Men's Coats.—One story and basement, owned by occupant. Goods made for, and wholesaled by Friend Bros. & Co. Six employes: 2 male, 4 female, all over 16; family closet; work shop, basement; 1 room 18x22x8 ft., 5 windows 2' 4"x4 ft.; not used as living, or sleeping room, but connect by inside stairs with living room; contains no bedding or cooking utensils; direct entrance; sufficiently lighted, heated and ventilated; has 528 cubic feet air space for each person; needs no changes or renovation; free from vermin and stench. General condition good.

Heinrich Neohns, 548 25th St., Men's Coats.—Two story frame, owned by occupant. Goods made for, and wholesaled by Friend Bros. & Co. Eight employes: 2 male, 6 female; 3 under 16 (no affidavits). Two closets, outside, water connections; sanitation good. Shop rear half 1st fl. 1 room, 22x20x9, 8 windows 2' 2"x5½ ft.; not used as, or connected with living or sleeping rooms; contains no bedding or cooking utensils; direct entrance; enough heat, light and air; has 495 cubic feet air space for each person; needs no changes, or renovation; free from vermin and stench. General condition good. Ordered affidavits for 3 employes under 16.

Antone Papcz, 648 14th St., Overcoats.—One story frame, owned by occupant. Goods made for, and wholesaled by D Adler & Sons lCo. Co. Twelve employes: 4 male, 8 females; 1 under 16 (no affidavit). Only 1 closet, basement, sanitation good. Shop occupies entire building, 1 room, 30x30x9 ft., 13 windows, 2' 4"x5 ft.; not used for, or connected with, living or

sleeping rooms; contains no bedding or cooking utensils; direct entrance; enough light, heat and air; has 450 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. General condition good. Ordered affidavit for girl under 16 and an additional closet.

M. Primakow, 1417 Fond du Lac Ave., Men's Pants.—Two story frame, owned by W. Schabaam, 1417 Fond du Lac Ave. Goods made for and wholesaled by Friend Bros. & Co. Sixteen employes, 6 male, 10 female, all over 16. Two closets, basement, sanitation good. Shop occupies entire 1st fl.; 2 rooms, one 30x40x14 (twelve people), 3 windows 2½x6 ft; one 10x30x14 ft. (four people) store front all glass; not used for, or connected with living or sleeping rooms; contains no bedding or cooking utensils; direct entrances; enough light, heat and air; has 1,312 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. General condition good.

Wm. Wegner, 660 23d St., Men's Coats.—Two story frame, owned by occupant. Goods made for, and wholesaled by D. Adler & Sons Clo. Co. Ten employes: 2 male, 8 female, all over 16. Only 1 closet, sanitation good. Shop, 1 room (rear first fl.), 18x24x9, 7 windows 2' 4"x5; not used as or directly connected with living, or sleeping rooms; contains no bedding, or cooking utensils; direct entrance; enough light, heat and air; has 388 cubic feet air space for each person; needs no changes or renovation; free from vermin and stench. General condition good. Ordered an additional closet.

Frank Krivanek, 635 16th St., Men's Coats.—Two story frame, owned by occupant. Goods made for, and wholesaled by Friend Bros. & Co. Power gas engine. Sixteen employes: 4 male, 12 female, all over 16. Only 1 closet 1st fl., sanitation good. Shop entire 2d. fl. 20x40x10, 12 windows 2' 4"x5 ft.; not used as, or connected with living or sleeping rooms; contains no bedding, or cooking utensils; direct entrance; sufficient heat, light and air; has 500 cubic air space for each person; needs no changes or renovation; free from vermin, and stench. General condition good. Ordered an additional closet.

Mike Aronson, 699 12th St., Men's coats.—One story frame, Owned by Wm. Imse, 699 12 St. Goods made for and wholesaled by Friend Bros. and D. Adler & Sons Clo. Co. Six employes, 3 male, 3 female, all over 16. One closet only, opening from billiard room adjoining tailor shop. Shop occupies entire building, 1 room 16x60x9, 9 windows 2' 4"x5 ft.; not used as, or connected with living or sleeping rooms; contains no bedding, or cooking utensils; direct entrance; doors swing in; sufficient light, heat and air; has 1,440 cubic feet air space for each person; needs no changing or renovation. General condition good. Ordered proper closets for girls.

Frank Kolar, 625 12th St., Men's Coats.—Two story frame, owned by Jas. Matzek, 625 12th St. Goods made for and wholesaled by D. Adler & Sons Clo. Co. Nine employes: 3 male, 6 female, (all over 16). Only 1 closet, outside; sanitation good. Shop all 1st fl., 2 rooms, 14x16x9 (2 men), 3 windows 2' 2"x5 ft.; 18x24x9 (7 employes), 7 windows 2' 2"x 5; not used for, or connected with living or sleeping rooms; direct entrance; sufficient light, heat and air; has 656 cubic feet air space for each person; no changes or renovation needed; free from vermin and stench. General condition good.

E. & A. Fisher, 955 2d St., Men's Pants.—Two story frame, owned by Millie Fisher, 955 2d St. Goods made for, and wholesaled by Friend Bros. & Co. and D. Adler & Sons Clo. Co. Forty-seven employes: 7 male, 40 female; 2 under 16, 1 under 14, (no affidavits kept); 3 closets, basement, water connections, sanitation good. Shop occupies entire building, 2 rooms 20x72x9, 23 windows 2' 2"x6, 2 windows 3½x6, and 8x16x9, 3 windows 2' 2"x6; not used as or connected with living, or sleeping rooms; contains no bedding or cooking utensils; direct entrance; sufficient light, heat and air; has 330 cubic feet air spece for each person; no changes or renovation needed; free from vermin and stench. General condition *very* good. Ordered affidavits, also girl under 14 discharged.

F. Hasselwander, 1089 5th St., Men's Pants.—One story frame, owned by occupant. Goods made for and wholesaled by Hart, Schaffner & Marks. Power gas engine. Forty em-

ployes: 7 male, 33 female; 12 under 16, 5 under 14. Five closets, water connections, sanitation good; not used as or connected with living or sleeping rooms; contains no bedding or cooking utensils, etc.; direct entrance; sufficiently lighted, heated and aired; has 378 cubic feet air space for each person; needs no changing or renovation. General condition good. Ordered affidavits; also girls under 14 discharged.

Rose Barnett, 1004 6th St., Men's Coats.—Two story frame, owned by Simon Barnett, 1004 6th St. Goods made for and wholesaled by Friend Bros. & Co. Twenty-seven employes: 5 male, 19 female; 3 under 16, 1 under 14 (no affidavits); 2 closets, separate, sanitation good. Shop entire 1st fl., 22x60x12. 11 windows, 2 ft. 4 in. x 4 ft. 6 in, and stone front; also 12x24x9, three windows 2 ft. 4 in. x 4½ ft.; not used for living, or sleeping rooms, but connected with kitchen in rear; contains no bedding or cooking utensils; direct entrance, doors swinging in; enough heat, light and air; has 685 cubic feet air space for each person; needs no changing or renovation; free from vermin and obnoxious odors. General condition good. Ordered affidavits; girl under 14 discharged.

Robert Michaelsen, 1085 5th St., Men's Pants.—Two story frame, owned by F. Kripleim, 1085 5th St. Goods made for and wholesaled by Rosenberg & Wheeler, Chicago. Eight employes: 1 male, 7 female; 3 under 16, 2 under 14, (no affidavits); one closet only, sanitation good. Shop, 1 room on 1st fl., 15x20x9; not used as, but connected with living or sleeping rooms direct entrance; enough light, heat and air; has 337 cubic feet air space for each person; needs no changing, or renovating; free from vermin and stench. General condition good. Ordered affidavits; 2 girls discharged and door to living rooms closed permanently.

Louis Densky, 1520 Vliet St., Men's Coats.—One story frame, owned by occupant. Goods made for and wholesaled by D. Adler & Sons Clo. Co. Fifteen employes: 5 male, 10 female, all over 16. Two closets, water connections, sanitation good. Shop entire building, 2 rooms, 1, 22x30x9, (9 windows 2' 4" x 5½'), 1, 10x22x9', (1 window, 2' 4" x 5½'); not

used as, or connected with living or sleeping rooms; contains no bedding or cooking utensils; direct entrance; has 528 cubic feet bedding or cooking utensils; direct entrance; sufficiently lighted, heated and aired; has 528 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. General condition good.

M. Rosenstein, 522 12th St., Men's Coats.—Two story frame, owned by C. Schramck, 447 12 St. Goods made for and wholesaled by Friend Bros. & Co. Eleven employes: 4 male, 7 female, all over 16. Separate closets for sexes, water connections, sanitation good. Shop entire first floor, 1 room, 30x40x12, 2 windows, 3x6; also glass partition separating shop from store in front half; not used for or connected with living or sleeping rooms; contains no bedding or cooking utensils; direct entrance; enough heat, light and air; has 872 cubic feet air space for each person; needs no changes or renovation; free from vermin and stench. General condition good.

Joe Goodman, 466 15th St., Men's Coats.—Two story frame, owned by occupant. Goods made for and wholesaled by D. Adler & Sons Clothing Co. Twenty-two employes: 8 male, 14 female, 4 under 16, 1 under 14; no affidavits; girl under 14 had permit; 4 closets, separate for sexes, water connections, sanitation good. Dwelling second floor, shop entire first floor; 1 room 28x60x9, 8 windows 2' 4" x 6', also store front; not used for, or connected with living or sleeping rooms; contains bedding or cooking utensils; outside doors, front and rear; enough light, heat and air; has 700 cubic feet air space for each persons; needs no changing or renovation; free from vermin and stench. General condition good. Ordered affidavits for employes under 16.

V. Worlkensten, 465 Fifteenth St., Shirts.—Two story, frame, owned by occupant. Goods made for and wholesaled by Friend Bros. & Co. Thirteen employes: 1 male, 12 female; none under 16; 2 closets separate for sexes, water connections, sanitation good. Dwelling second floor, shop entire first floor; 1 room 24x60x10, 4 windows 2' 4" x 4' 6", also store front; not used as or connected with living or sleeping rooms; contains no

bedding or cooking utensils; direct entrance; enough light, heat and air; has 1,100 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. General condition good.

Henry Giclens, 1408 Vliet St.—(In this shop clothing is cut for Landauer & Co., and given out to be made up.) Two story frame, owned by P. Lauer, 608 10th St. Six employes: 3 male, 3 female; 2 under 16, no affidavits. One closet, basement, water connections, sanitation good. Dwelling second floor, shop entire first floor; 1 room, 24x80x12'; lighted by store front and three windows in rear, 2' 4" x 6'; not used for or connected with living or sleeping rooms; contains no bedding or cooking utensils; direct outside entrance; enough light, heat and air; has 3,840 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. General conditions good. Ordered affidavits for employes under 16.

Mrs. D. Linck, 796 Greenfield Ave., Men's Pants.—Two story frame, owned by occupant. Goods made for and wholesaled by D. Adler & Sons Clothing Co. Ten employes: female, all over 16. Family closet, basement, water connections, sanitation good; shop rear first floor, 1 room 17x22x9', 8 windows 2' 6" x 5'; not used for living or sleeping rooms, but connected therewith by door; contains no bedding or cooking utensils; direct outside entrance; enough light, heat and air; has 336 cubic feet air space for each person; no changes or renovation needed; free from vermin and stench. General condition good. Ordered door to living rooms closed.

C. S. Peterson, 290 National Avenue, Men's Pants.—Two story frame, owned by occupant. Goods made for and wholesaled by D. Adler & Sons Clothing Co. Eight employes: 2 male, 6 female, 1 under 16 (no affidavit); 3 closets, outside, separate for sexes, regularly disinfected, sanitation fair. Dwelling second floor, shop first floor, 1 room 54x22x7, 15 windows 2' 6" x 4' and glass doors; not used as or connected with living or sleeping rooms; contains no bedding or cooking utensils; enough light, heat and air; has 1,037 cubic feet air space for

each person; needs no changes or renovation; free from vermin and stench. General condition good. Ordered affidavit for employe under 16.

Mons Larson, 603 Clinton St., Men's Vests.—Two story frame, owned by J. C. Stamm, 599 Clinton St. Goods made for and wholesaled by D. Adler & Sons Clothing Co. Sixteen employes: 3 male, 13 female, none under 16. Only 1 closet, outside, not regularly disinfected, sanitation good. Shop entire first floor; 2 rooms 20x40x10, 3 windows 2½ x 5', also store front, all glass, 18x20x10, 4 windows 2½ x 5'; not used as or connected with living or sleeping rooms; contains no bedding or cooking utensils; 2 direct entrances; enough light, heat and air; has 725 cubic feet air space for each person; no changes or renovation needed; free from vermin and stench. General condition good. Ordered extra closet.

F. Wabsrall, 751 8th Ave., Men's Coats.—Two story frame, owned by occupant. Goods made for and wholesaled by Friend Bros. & Co. and D. Adler & Sons Clothing Co. Thirty-eight employes: 8 male, 30 female; 7 under 16; affidavits for all. Two closets, outside, separate for sexes, regularly disinfected, sanitation good; shop occupies entire building; 3 rooms 20x56x8, 21 windows 2' 2" x 4'; 20x34x9, 10 windows 2' 4" x 5'; 20x22x9, 8 windows 2' 4" x 5'; not used for or connected with living or sleeping rooms, contains no bedding or cooking utensils; direct entrance; stairway to second floor in good condition; enough light, heat and air; has 500 cubic feet air space for each person; no changes or renovating needed; free from vermin and stench. General condition good. Ordered additional closet.

Frank Heft, 700 9th St., Men's Coats.—One story frame, owned by occupant. Goods made for and wholesaled by D. Adler & Sons Clothing Co. Twenty-seven employes: 9 male, 18 female, 2 under 16, (affidavit for one). Two closets, basement, separate for sexes, water connections, sanitation good. Shop occupies entire building; 2 rooms 22x60x9, 15 windows 3x5'; 12x13x8, 5 windows 2' 4" x 5'; not used as or connected with living or sleeping rooms; contains no bedding or cooking

utensils; direct outside entrances; enough light, heat and air; has 520 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. General condition good. Ordered affidavit for 1 girl under 16.

John Tercdek, 656 Mitchell St., Men's Pants.—Two story frame, owned by occupant. Goods made for and wholesaled by D. Adler & Sons Clothing Co. Six employes: 1 male, 5 female, 1 under 16, no affidavit; only 1 closet, outside, regularly disinfected, sanitation good. Dwelling second floor, shop entire first floor, 1 room 22x30x7½', 6 windows 2' 4" x 3', also glass door; not used as or connected with living or sleeping rooms; contains no bedding or cooking utensils; direct outside entrances; enough heat, light and air; has 825 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. General condition good. Ordered affidavit for employe under 16.

H. Simon, (rear of) 691 12th St., Men's Coats.—Two story frame, owner lives 699 12th St. Goods made for and wholesaled by D. Adler & Sons Clothing Co. Eighteen employes: 11 male, 7 females; 1 under 16, 1 under 14. Two closets, 1 first floor, separate for sexes, water connections, sanitation good. Dwelling second floor; shop entire first floor, 1 room 24x50x10', 13 windows 2' 4"x5½'; not used for or connected with living or sleeping rooms; contains no bedding, or cooking utensils, etc.; direct entrance; enough light, heat and air; has 666 cubic feet air space for each person; no changes or renovation needed; free from vermin and stench. General condition good. Ordered girl under 14 discharged, and affidavit for employe under 16.

Hugo Soldon, 2101 Walnut St., Men's Vests.—Two story frame, owned by Gettleman Brewing Co. (saloon first floor, dwelling and shop above). Goods made for and wholesaled by Friend Bros. & Co., and Bellac & Co., 4th and Grand Ave. Two employes: 1 male, 1 female; 1 under 16 (no affidavit). One closet only, second floor, water connections, sanitation good. Shop two rooms, rear second floor; each room 14x15x9'; 3 windows 2½x6'. Work rooms are used for cooking, etc., and con-

ned by door with living rooms; entered direct by two stairways; enough light; has 1,890 cubic feet air space for each person; needs no changes or renovation; free from vermin and stench. General condition good. Ordered affidavit, doors to living rooms kept closed, and cook stove removed.

J. Sillak, 1525 Wright St., Men's Vests.—Two story frame (owner's agents, Richter & Dick, 14 Grand Avenue), used as dwelling, tailor shop and shoe shop. Goods made for and wholesaled by Friend Bros. & Co. Three employes, female. One family closet, outside, sanitation good. Shop, one room, first floor, 25x13x10'; store front glass. Part of room separated by curtain and used for sleeping, connected by door with kitchen, which causes odor in shop; separate outside entrance; enough light, heat, and air; has 1,083 cubic feet air space for each person. General condition good. Ordered shop separated from sleeping rooms.

C. Gauger, 1263 Buffam St., Men's Pants.—One story frame, owned by occupant. Goods made for and wholesaled by Friend Bros. & Co. Sixteen employes: 4 male, 12 female; 2 under 16, no affidavits. Only 1 closet, outside, water connections, sanitation good. Shop, entire building, 1 room 18x40x9½', 12 windows 2'2"x5'; not used as, or connected with living or sleeping rooms; contains no bedding or cooking utensils; direct entrance; enough light, heat and air; has 427 cubic feet air space for each person; needs no changing or renovation; free from vermin and stench. General condition good. Ordered affidavits for 2 employes under 16, and an additional closet.

Amelia Piepenhagen, 807 Booth St., Men's Pants.—One story frame, owned by F. Piepenhagen, 807 Booth St. Goods made for and wholesaled by Friend Bros. & Co. Sixteen employes: 2 male, 14 female; 2 under 16 (no affidavits). Only one closet, outside, sanitation very good. Shop entire building, 1 room 18 x 30 x 8'; 13 windows 2'4" x 5'; not used as or connected with living or sleeping rooms; contains no bedding or cooking utensils; entrance direct; enough light, heat and air; has 270 cubic feet air space for each person; needs no changing

or renovation; free from vermin and stench. General character good. Ordered additional closet and affidavits for employees under 16.

Jacob Sebastian, Rear 920 Teutonia St., Men's Coats.—One story frame, owned by occupant. Goods made for and wholesaled by Friend Bros. & Co., and D. Adler & Sons Clothing Co. Seven employees: 1 male, 6 female; 1 under 16 (no affidavit). Only 1 closet, outside, regularly disinfected, sanitation good. Shop entire building, 1 room 24 x 40 x 10'; 10 windows 2'4" x 6'; not used as or connected with living or sleeping rooms; contains no bedding or cooking utensils; separate direct entrance; enough light, heat and air; has 371 cubic feet air space for each person; needs no changing or renovating; free from vermin or stench. General condition good. Ordered affidavit.

C. Wollager, 1018 Cold Spring Ave., Men's Coats.—One story frame, owned by Paul Jieka. Goods made for and wholesaled by Friend Bros. & Co. Six employees: 1 male, 5 female, all over 16. Only 1 closet, outside, regularly disinfected, sanitation good. Shop, front first floor, 1 room 14 x 16 x 8'; 3 windows, 2½' x 5'; not used as living or sleeping room, but connected therewith by door; contains no bedding or cooking utensils; direct entrance; enough heat, light and air; has 298 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. Ordered door to living room closed.

F. Ohm, 1909½ State St., Men's Coats.—One story frame, owned by occupant. Goods made for and wholesaled by Friend Bros. & Co. Five employees: 1 male, 4 female, all over 16. One closet, outside, regularly disinfected, sanitation good. Shop, entire building; 1 room 18 x 34 x 8½'; 13 windows 2'4" x 5½'; not used as, or connected with living or sleeping rooms; contains no bedding, or cooking utensils; direct entrance; enough light, heat and air; has 1,040 cubic feet for each person; needs no changes or renovation; free from vermin and stench. General condition good.

Frank Kolbeck, 998 11th St., Men's Vests.—One story frame, owned by Paul Bilz, 982 Booth St. Goods made for and wholesaled by D. Adler & Sons Clothing Co. Ten employees: 1 male, 9 female; 6 under 16. One (outside) family closet, regularly disinfected, sanitation good. Shop, first floor front, 1 room 22 x 30 x 10'; glass front and 2 windows 2½' x 6'; not used as living or sleeping room, but connecting by door with living room; contains no bedding or cooking utensils; entrance direct; enough light, heat and air; has 660 cubic feet space for each person; needs no changing or renovation; free from vermin and stench. General condition good. Ordered affidavits for employees under 16.

John Smith, 874 7th St., Men's Pants.—One story and basement, owned by William Marquet, 13th St., between Sherman and Vine. Goods made for and wholesaled by D. Adler & Sons Clothing Co. Eleven employees: 2 male, 9 female; 1 under 16, none under 14. One closet only, basement; water connections, sanitation good. Shop, entire basement; 2 rooms, 20 x 32 x 8; 7 windows 2½' x 2½'; and 16 x 20 x 8, 2 windows 2½' x 2½'; not used as living or sleeping rooms, but connected therewith by stairs; contains no bedding or cooking utensils; direct entrance; enough light, heat and air; has 465 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. General condition good. Ordered affidavits; also stairs to living rooms closed, and an additional closet.

John Jobs, 697 8th St., Men's Coats.—One story frame, owned by occupant. Goods made for and wholesaled by Friend Bros. & Co. Thirteen employees: 4 male, 9 female; 2 under 16; none under 14. Two closets, basement, separate for sexes, water connections, sanitation good. Shop, entire building; 1 room 20 x 45 x 9'; 13 windows 2'2" x 4'; not used as, or connected with living or sleeping rooms; contains no bedding or cooking utensils; direct entrance; enough heat, light and air; has 623 cubic feet air space for each person; needs no changing or renovating; is free from vermin and stench. General condition good. Ordered affidavits for 2 under 16.

John Kravechil, 663 12th St., Men's Coats.—One story frame, owned by occupant. Goods made for and wholesaled by D. Adler & Sons Clothing Co. Ten employes: 4 male, 6 female; none under 16. Only 1 closet, outside, regularly disinfected, sanitation good. Shop, entire building; 1 room 20 x 40 x 9 feet; 12 windows $2\frac{1}{2}$ x $4\frac{1}{2}$ '; not used for or connected with living or sleeping rooms; contains no bedding, or cooking utensils; direct entrance; enough heat, light and air; has 720 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. General condition good. Ordered an additional closet.

Adolph Kakac, 777 14th St., Men's Coats.—One story frame, owned by occupant. Goods made for and wholesaled by D. Adler & Sons Clothing Co. Twenty-six employes: 7 male, 19 female; 3 under 16, none under 14. Three closets, outside, separate for sexes, regularly disinfected, sanitation good. Shop, entire building; 1 room 24 x 48 x $9\frac{1}{2}$ '; 16 windows 2'2" x $5\frac{1}{2}$ '; not used as or connected with living or sleeping rooms; contains no bedding, or cooking utensils; direct entrance; enough heat, light and air; has 420 cubic feet air space for each person; needs no changes or renovation; free from vermin and stench. General condition good. Ordered affidavits for 3 employes under 16.

Emil Zahrodka, 673 13th St., Men's Coats.—Two story frame, owned by A. Hovating, First St. Goods made for and wholesaled by D. Adler & Sons Clothing Co. Sixteen employes: 5 male, 11 female; 3 under 16, none under 14; no affidavits. Two closets, separate for sexes, first floor, water connections, sanitation good. Shop, all first floor; 1 room 22 x 44 x 10'; 13 windows 2'2" x 6'; not used as, or connected with living or sleeping rooms; contains no bedding, or cooking utensils; direct entrance; enough heat, light and air; has 611 cubic feet air space for each person; needs no changes or renovation; free from vermin and stench. General condition good. Ordered affidavits for employes under 16.

C. Neustader, 1509 Walnut St., Men's Coats.—One-story frame, owned by occupant. Goods made for, and wholesaled by

Friend Bros. & Co.; 9 employes, 3 male, 6 female, none under 16; 2 closets, outside, separate for sexes, regularly disinfected; sanitation good. Shop entire building, 1 room 18x355x9'; 14 windows 2½"x5½'; not used as, or connected with, living or sleeping rooms; contains no bedding, etc., or cooking utensils; direct entrance; has 630 cubic feet of air space for each person; enough light, heat and air; needs no change or renovation; free from vermin and stench. General condition good.

Harry Greene, 171 Martin St., Custom Tailoring.—Two-story frame, owned by Tuttle Estate. Goods made for Wm. Marnitz & Co., 419 Broadway, and Radech & Gray, Iron Block; 2 employes, 1 male, 1 female, both over 16; no regular hours; 1 closet, sanitation good. Shop 1 room, 1st floor, 11 x 13 x 9, 2 windows 2'4" x 5; not used as, or at present connected with living or sleeping rooms; contains; no bedding, etc., or cooking utensils; direct entrance; doors swinging in; enough light, heat and air; has 643 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. General condition good.

L. Meyersohn, 688 18th St., Custom Tailoring.—One-story frame, owned by occupant. Goods made for Wm. Marintz & Co., 419 Broadway, and sold by them to custom trade; 2 employes, 1 male, 1 female, both over 16; 8 hours daily work; 1 closet, sanitation good; shop all first floor, 12 x 18 x 8; 5 windows 2'4" x 4'4"; needs no cleaning or renovation; free from vermin or stench; not used as, or connected with, living or sleeping rooms; contains no bedding, etc., or cooking utensils; direct entrance; enough light, heat and air; has 864 cubic feet air space for each person. General condition good.

Albert Pritzkow, 1458 7th St., Men's Pants.—Two-story frame; owner's agent, Kramer. Goods made for, and wholesaled by Goll & Frank and S. Fein Bros. & Co.; 7 employes, 1 male, 6 female, none under 16; 1 closet, outside, regularly disinfected, sanitation good. Shop entire first floor, 3 rooms; 14 x 15 x 8 (2 windows 2'2" x 4½'), 8 x 9 x 8 (1 window 2'2" x 4½'), 9 x 9 x 8 (1 window 2'2" x 4½'); not used as, or connected with, living or sleeping rooms; contains no bedding, etc.,

or cooking utensils; separate direct entrance; enough light, heat and air; has 415 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. General condition good.

L. Primakow, 25th and Walnut, Men's Shirts.—Three-story brick, owned by Wm. Kahn, engineer E. P. Allis Co.; used as flats and stores; fire escapes from upper floors. Goods made for, and wholesaled by Maller & Albenberg, Cohen Bros. and Bauer, Newman & Co.; 41 employes, 1 male, 40 female, none under 16; 9 hours daily work; 3 closets, basement, water connections, sanitation good; power, gas engine; shop first floor, 2 rooms, one 32 x 50 x 14; store front and two windows 2'4" x 3' (30 employes, one 24 x 50 x 14 store front (11 employes); not used as, or connected with, living or sleeping rooms; contains no bedding, etc., or cooking utensils; direct entrance from 2 streets; enough light, heat and air; has 956 cubic feet air space for each person; needs no changing or renovating; free from vermin and stench. General condition good.

Louis Scherzer, 1602 Vliet St., Knit Goods.—Building owned by Mrs. Beyer, 445 16th St.; used for dwelling and knitting shop. Goods made for retail customers; 3 employes, 2 male, 2 female, 1 under 16 (no affidavit); 8 hours daily; only 1 closet, outside, regularly disinfected, sanitation good; shop, 1 front room; lighted by store in front; not used as living or sleeping room, but connected with living room in rear; contains no bedding, etc., or cooking utensils; direct entrance; enough light, heat and air; no changing or renovating needed; free from vermin and stench. General condition good. Ordered affidavit for employes under 16.

Gustave Miller, 837 18th St., Custom Tailoring.—Two-story frame, owned by occupant. Goods made for, and sold to customers direct by Wm. Mauritz & Co., who keep record required by law; 2 employes, 1 male, 1 female, both over 16; no regular hours; 1 family closet, sanitation very good; shop, 1 room first floor, 13 x 14 x 9, 3 windows 2'4" x 5' each; not used for living or sleeping purposes, but connected with sitting room; contains no bedding or cooking utensils; direct entrance; enough heat,

light and air; has 819 cubic feet air space for each person; needs no changing or renovation; free from vermin and stench. General conditions very good. Ordered door to sitting room permanently closed.

K. Kleneta, 103 Harmon St., Custom Tailoring.—One and one-half-story frame, owned by occupant. Goods made for, and sold to customers direct by Wm. Maurintz & Co., Broadway; 2 employes, male, not under 16; no regular hours. One family closet inside, sanitation very good. Shop, 1 room, first floor, rear, $8\frac{1}{2} \times 16 \times 9$, 4 windows $2'4'' \times 5'$ each; not used for living or sleeping, but connected by door with kitchen; contains no bedding or cooking utensils; no direct outside entrance; enough heat, light and air; has 612 cubic air space for each person; needs no changing or renovation; free from vermin and stench. General condition good. Ordered outside entrance and door to living room closed.

J. Vopaliensky, 691 14th Ave., Men's Coats.—One-story and basement frame, owned by James Peterson, 691 14th avenue. Goods made for and wholesaled by Friend Bros. & Co.; 3 employes; 1 male, 2 females, none under 16; one closet, sanitation all right. Shop, first floor, 2 rooms, one $8 \times 8 \times 9$, 1 window living or sleeping, but connected directly with sleeping rooms; $2'4'' \times 5'$, one $12 \times 13 \times 9'$, 2 windows $2-4 \times 5-$; not used for living or sleeping, but connected directly with sleeping rooms; contains no bedding, etc., or cooking utensils; outside entrance; enough heat, light and air; has 660 cubic feet air space for each person; free from vermin and stench; needs whitewashing and cleaning. General condition not very good. Ordered door to living rooms closed and rooms whitewashed.

Samuel Carp, 456 4th St., Custom Tailoring.—Two-story frame, owned by Mrs. Flagge, 456 4th St. Goods made for, and sold to customers direct by Radech & Gray, Iron Block, and F. C. Sallter & Co., 116 Grand Ave; 2 employes, male, over 16; no regular hours; 1 outside family closet, sanitation fair. Shop, 1 room, rear, first floor, $8 \times 13 \times 8$, B. windows $2'4'' \times 4'2''$ each; not used as living or sleeping rooms, but connected with kitchen; direct outside entrance; enough heat, light and air; has 416

cubic feet air space for each person; needs no changing or renovating; odor from kitchen prevails in work room. General condition fair. Ordered door to kitchen kept closed.

Joseph Bauer, 748 Racine St., Cutting Goods and Making Button-Holes.—Two-story and basement frame, owned by occupant. In this shop cutting is done for H. Stern, Jr., Bros. & Co.; 2 employes, 1 male, 1 female, none under 16; one closet, water connections. Shop, 1 room, basement, 25 x 50 x 7½', 7 windows 2'4" x 4' each; not used as, or connected with, living or sleeping rooms; contains no beds or cooking utensils; direct entrance; enough heat, light and air; has 4,687 cubic feet air space for each person; needs no changing or renovation; free from vermin and stench. General condition good.

AN ANALYSIS

Of Reports of Inspection of Sweat Shops in Wisconsin, Including all Premises Embraced Within the Law (Chap. 232 Laws of 1899), the Shops all Being in the City of Milwaukee and Producing Wearing Apparel Only.

[Work rooms where one or more members of the immediate family only are employed are not affected by this law, but were inspected and elsewhere analyzed.]

After defining "work-shop or factory," the Act (Sec. 2) provides that it "shall be separate from, and have no door, window, or other opening into any living or sleeping room of any tenement or dwelling."

The reports of inspectors show that this provision of law was violated [and the appropriated orders issued by inspectors] in 23 cases, as follows:

M. S. Bullard, 1222 Vliet St.

Abraham Devidorf, 502 5th St.

H. Alberts, 153 Burleigh St.

Geo. Turbman, 550 12th St.

Mr. M. Brann, 690 12th St.

Geo. Beer, 2120 Galena St.
Jacob Gans, 2410 Cold Spring Ave.
Mrs. Amelia Switzer, Cor. Davis and 9th St.
H. Otto, 612 24½ St.
Rosa Barnett, 1004 6th St.
Robt. Michaelsen, 1085 5th St.
Samuel Carp, 456 4th St.
J. Vopolensky, 691 14th St.
Mrs. D. Linck, 796 Greenfield Ave.
Hugo Soldon, 2101 Walnut St.
J. Sillak, 1525 Wright St.
C. Wallager, 1018 Cold Spring Ave.
F. Bruss & Son, 445 12th St.
F. Kolbeck, 998 11th St.
John Smith, 874 7th St.
Louis Schrezer, 1602 Vliet St.
Gustav Miller, 837 18th St.
H. Klecta, 103 Harmon St.

In 76 other cases the law was being obeyed.

Section 2 further provides that "no such workshop or factory shall be used at any time for living or sleeping purposes."

The reports of inspectors show that in the following two instances the law was being violated, and the appropriate orders issued:

Huga Soldon, 2101 Walnut St., where the shop was used as living room, and J. Sillak, 1525 Wright St., where shop was used as sleeping room.

In the 77 other cases the law was being complied with.

Section 2 continued: Such workshop "shall contain no bed, bedding, cooking or other utensils, except what is necessary to carry on the work therein." This provision was found violated and the appropriate orders issued in the following three cases:

Mrs. M. Braun, 690 12th St.

Hugo Soldon, 2101 Walnut St.

J. Sillak, 1525 Wright St.

In 76 other cases the law was being complied with.

Section 2 continued: "Every shop or factory shall have an entrance from outside direct, and if above first floor shall have a separate and distinct stairway leading thereto."

These provisions, it was found, were being violated in the following three cases, and the appropriate orders issued:

A Kellermann, 1024 Richards St.

Mrs. Amelia Swetzer, corner Davis and 9th St.

K. Kleveta, 103 Harmon St.

In 76 other cases the law was being obeyed.

Section 2 continued: "Every such workshop shall be well and sufficiently lighted, heated and ventilated."

The reports of inspectors show that this provision of law was [and the appropriate orders issued] in 1 case, viz.:

Geo. Beer, 2120 Galena St.

In 78 other cases the reports show that the law was being obeyed.

Section 2 continued: Every such workshop or factory "shall provide for each person employed therein no less than two hundred and fifty cubic feet of air space in day time and four hundred cubic feet at night."

The reports of inspection give the length, breadth and height of all work rooms, and from these figures the number of cubic feet of air space in each room is ascertained, and divided by the number of persons working therein. The resulting figures range from 270 cubic feet to 4,687 cubic feet for each person, the average for all being 871 cubic feet for each person employed. If two shops used only for cutting and distributing are left out of the calculation the average number of cubic feet of air space is reduced to 783, or over three times the air space provided by law for day time. In every case the air space exceeds the legal day time requirements.

The reports show that in only one case was the shop used for sleeping purposes. In that case there was 1,083 cubic feet of air space, whereas 400 only is required by law during the night.

Section 2 continued: "Every such workshop shall have suitable closet arrangements for each sex employed therein, as follows: Where there are 10 or more persons, and 3 or more to the number of 20 are of either sex, a separate and distinct water closet * * * shall be provided for each sex; when the number employed is more than 25 of either sex there shall be provided an additional water closet for such sex up to the number of fifty persons," etc., etc,

The report of inspectors show that closet arrangements to conform to this provision of law had not been provided and the appropriate orders were issued in the following cases:

A. Boehm Mfg. Co., 720 12th St., owned by Peckman, 14th and Chestnut Sts.

B. Kauffman, 610 11th St., owned by occupant.

L. Densky, 1520 Vliet St., owned by occupant.

J. Kischmeyer, 1509 7th St., owned by occupant.

Frank Sladek, 1437 Tomah St., owned by occupant.

Antone Papez, 648 14th St., owned by occupant.

Wm. Wegner, 660 23d St., owned by occupant.

Frank Krivanek, 635 16th St., owned by occupant.

Robt. Michaelson, 1085 5th St., owned by F. Krijlein, 1085 5th St.

Mons Larson, 603 Clinton St.; Bldg. owned by J. C. Stamm, 599 Clinton.

F. Wobsrall, 751 8th Ave.; Bldg. owned by occupant.

C. Ganger, 1263 Buffum St.; Bldg. owned by occupant.

Amelia Riepenhagen, 807 Booth St.; Bldg. owned by F. Piepenhagen.

Frank Kolbeck, 998 11th St.; Bldg. owned by Paul Biltz, Clark and Booth Sts.

John Smith, 874 7th St.; Bldg. owned by Wm. Marquardt.

John Kravichil, 663 12th St.; Bldg. owned by occupant.

In the 63 other cases the law was being obeyed.

Section 2 continued: "Every such workshop or factory shall be kept in a clean and wholesome condition * * * and all closets shall be regularly disinfected * * * and the Commissioner of Labor and Factory Inspectors may require all necessary changes or any process of cleaning, painting or white-washing * * * to assure absolute freedom from obnoxious odor, filth, vermin, decaying matters or any condition liable to impair health or breed * * * disease." In the following cases the reports show that the condition of the premises failed to conform to the requirements, and that appropriate orders were issued:

M. S. Bullard, 1222 Vliet St.

Barnett Goldstein, 1705 Vliet St.

Abraham Devidorf, 502 5th St.

Mrs. Amelia Swetzer, Davis and 9th Sts.

J. Sillak, 1525 Wright St.

J. Vopaliensky, 691 14th St.

Samuel Carp, 456 4th St.

In 72 other cases the law was being obeyed.

RESULTS OF INSPECTION OF 79 WORKSHOPS (EMBRACED WITHIN THE SWEAT SHOP LAW), WITH REFERENCE TO THE CHILD LABOR LAW, CHAP. 274, LAWS 1899.

Section 1 provides that "no child under 14 years of age shall be employed at any time in any workshop or factory."

This provision was found violated, and orders issued to discharge minors not having permits, as provided by Sec. 6 of Chap. 274, L. '99, who were employed in the following cases:

	Employees under 14
H. Simon, 691-12th St.	1
Wm. Kann, 1003-21st St.	1
Rose BarBnett, 1004-6th St.	1
Frank Porkorney, 467-16th St.	1
Robt. Michaelson, 1085-5th St.	2
August Wurl, 1063-11th St.	2
E. and A. Fisher, 975-2d St.	1
F. Hasselwander, 1089-5th St.	5

In the 71 other cases the law was being obeyed.

Section 2 provides that employes under 16 years of age shall not be employed, unless there is provided an affidavit stating name, age, place, birth, etc., etc., which shall be shown to the inspector. The reports of inspection show that there were no such affidavits [and appropriate orders were issued] for employes under 16 employed as follows:

	Employees under 16 with no affidavits.
Barnett Goldstein, 1705 Villet St.	1
A. Devldorf, 502-5th St.	1
Wm. Kann, 1003-21st St.	7
H. Alberts, 153 Berlegh St.	1
A. Kellermann, 1024 Richards St.	3
Frank Porkorney, 467-16th St.	6
George Beer, 2120 Galena St.	1
Jacob Gans, 2410 Cold Spring Ave.	1
Joe Rudolph, 621-19th St.	1
Anton Kolman, 1332 Villet St.	2
Anton Shlniak, 769-18th St.	4
J. Klischmeyer, 1509-7th St.	5
August Wurl, 1063-11th St.	2
J. Cerny, 616-18th St.	1
F. Schulz, 765-12th St.	1

Employees under 16
with no affidavits.

F. Sladek, 1437 Tomah St.	2
H. Nevhus, 548—14th St.	3
A. Papez, 648—14th St.	1
E. and A. Fisher, 955—2d St.	2
F. Hasselwander, 1089—5th St.	12
Rose Harnett, 1004—6th St.	3
R. Michaelsen, 1085—5th St.	3
Joe Goodman, 466—15th St.	4
Henry Gillens, 1408 Vliet St.	2
C. S. Peterson, 290 National Ave.	1
Frank Heft, 700—9th Ave.	1
John Tercdeck, 656 Mitchell St.	1
H. Simon, 691—12th St., rear	1
H. Seldon, 2101 Walnut St.	1
C. Ganger, 1263 Buffom St.	2
A. Plepenhagen, 807 Booth St.	2
Jacob Sebastian, rear 920 Teutonia	1
Frank Kolbeck, 998—11th St.	6
John Smith, 874—7th St.	1
John Joba, 697—8th St.	2
Adolph Kakac, 777—14th St.	3
E. Zahradka, 673—13th St.	3

In the 420 other cases the law was being obeyed.

ANALYSIS OF ORDERS ISSUED.

142 orders issued by factory inspectors as shown by reports of inspection of the

79 work shops embraced within the sweat-shop law, as follows:

97 affidavits for employes under 16 years.

14 orders to discharge employes under 14 years of age.

10 orders to permanently close openings to living and sleeping rooms.

1 order to discontinue using work-shop as sleeping room.

1 order to remove cooking utensils from work-shop.

1 order to whitewash room.

1 order to provide separate outside entrance to shop.

1 order to repair door.

1 order for more windows.

14 orders to provide additional closets.

1 order to repair closet.

INSPECTIONS OF WORK ROOMS WHERE WORK IS DONE BY MEM-
BERS OF THE IMMEDIATE FAMILY.

[These places are not embraced within the sweat shop law.]

Mrs. B. Lemmer, 2326 Walnut St., Knit Goods.—One-story frame, owned by occupant. Work done for Great Western Knitting Co.; 2 members family working, no regular hours; closet regularly disinfected: shop 12 x 15 x 9; used as a sitting room, not for cooking; direct entrance; enough light, heat and air; needs no renovation; free from vermin and stench. General condition good.

Mary Koconek, 681 Scott St. (rear), Men's Pants.—Two-story frame, owned by occupant. Work done for D. Adler Clothing Co.; 2 members family working; no regular hours; closets, condition good; shop 12 x 14 x 8; not used for living or sleeping room, but connected with kitchen; contains no bedding or cooking utensils; no direct entrance; enough heat, light and air; no renovation needed; free from vermin and stench. General condition good.

Mrs. E. Youngbeck, 614 Lloyd St., Men's Vests.—Two-story frame. Work done for Friend Bros. & Co.; 3 members family working; no regular hours; closet conditions good; shop, 1 room, basement, 14 x 13 x 8; not used for living, or sleeping, but connected with kitchen; contains no bedding, etc., or cooking utensils; entrance through living rooms; enough heat, light and air; no renovation needed; free from vermin and stench. General condition good.

Mary Lehuter, 584 18th St., Clothing.—Two-story frame. Work done for Friend Bros. & Co.; 4 members family working; closet conditions fair; work done in living room, 11 x 12 x 8, containing cooking utensils; direct entrance; room too small and close for work done, and smells of cooking. General condition poor.

F. Bruss & Son, 445 12th St., Custom Tailoring.—Two story frame. Work done for "American Tailors." Father and two sons working; no regular hours; closet condition good. Shop 16 x 20 x 10; not used for living or sleeping, but connected with living room by door; contains no bedding or cooking utensils; outside entrance; enough heat, light and air; no changes or renovation needed; free from vermin and stench. General condition good.

Mrs. Starke, 407 12th St., Knit Jackets.—Two-story frame; work done for Great Western Knitting Co; 2 sisters working; no regular hours; closet conditions good. No regular working room; everything sanitary and clean; enough heat, light and air; free from vermin and stench. General conditions good.

L. Lemmer, 533 10th St., Custom Tailoring.—Two-story frame. Work done for Burkhardt Bros., Grove St., and Havenor & Bauman, 4th and Grand Ave. Father, mother, son and daughter working; no regular hours; closet conditions good; work room, 2d floor, 15 x 16 x 8; nt used for living or sleeping, but connected through hall with living rooms; enough heat, light and air; no changing or renovating needed; free from vermin and stench. General condition good.

Fred Newrel, 189 Burleigh St., Custom Tailoring.—One-story and basement frame, owned by occupant. Goods made for custom tailors. Father and daughter working; no regular hours; closet conditions good; work room, basement, 12 x 13 x 8; not used for living or sleeping, but connected with kitchen; contains no bedding or cooking utensils; outside entrance; enough heat, light and air; needs no changing or renovation; free from vermin and stench. General condition good.

Louisa Hoyer, 1486 10th St., Men's Pants.—Two-story frame, owned by occupant. Goods made for Aaron Marks & Co. Mother and daughter working; closet conditions good; work room, part kitchen, 12 x 14 x 9; outside entrance; enough heat, light and air; no changing or renovating needed; no vermin or stench. General condition good.

Mary Pasowsky, 793 Grant St., Men's Pants.—Two-story and basement frame, owned by occupant. Goods made for Friend Bros. & Co; 3 sisters working; no regular hours; closet conditions good; work room, basement, 15 x 20 x 7, used also as kitchen; enough heat, light and air; no changing or renovating needed; no vermin or stench. General condition good.

Wm. Gaettsche, 1607 Walnut St., Custom Tailoring.—Two-story frame. Work done for Docter Bros. Father and daughter working; no regular hours; closet condition good. Work room, 2d floor, used also as bed room; enough heat, light and air; needs no changing or renovating; no vermin or stench. General conditions good.

Wm Weltzein, 574 Reed St., Custom Tailoring.—One-story frame, owned by occupant. Work done for Docter Bros. Hus-

band and wife working; no regular hours; closet conditions good. Work room 14 x 16 x 9, used also as kitchen; outside entrance; enough heat, light and air; needs no changing or renovating; no vermin or stench. General condition good.

Amelia Jager, 1159 7th St., Pants.—One-story frame. Work done for Bauer, Newman & Co. Mother and daughter working; no regular hours; closet conditions good. Work room used also as kitchen; direct entrance; enough heat, light and air; no changing or renovating needed; no vermin or stench. General condition good.

Adolph Bruenger, 1393 7th St., Pants.—One-story frame, owned by occupant. Goods made for Bauer, Newman & Co. Man and wife working; no regular hours; closet conditions good.

Mrs. M. Brown, 744 7th St., Knit goods.—Two story frame. Goods made for Great Western Knitting Co. Two sisters working; closet conditions good. Work done in living room, 14 x 14 x 9'; contains no bedding, etc., or cooking utensils; entered direct; enough heat, light and air; needs no changing or renovating; no vermin or stench. General conditions good.

Paulina Balkerman, 2103 Elm St., Vests.—Two story frame, owned by occupant. Work done for Shakman & Co. Mother and two daughters working. Closet conditions good. Work done in kitchen; outside entrance; enough heat, light and air; needs no changing or renovating; no vermin or stench. General condition good.

Lydia Vick, 958 Richard St., Men's Pants.—One story frame, owned by occupant. Work done for Mahler & Albenberg Co. Mother and 2 daughters working; closet conditions good. Work room 12 x 14 x 8; not used as, or connected with living or sleeping rooms; contains no bedding, etc., or cooking utensils; direct entrance; enough heat, light and air; needs no changing or renovating; no vermin or stench. General condition good.

Mrs. Bauers, 1022 Richard St., Pants.—One story brick, owned by her husband. Work done for Mahler & Albenberg Co. Mother and daughter working; closet condition fair; work done in living room, 11 x 12 x 8½; contains no bedding, etc., or cooking utensils; enough heat, light and air; no changing or renovating needed; no vermin or stench. General condition fair.

Minnie Tool, 1322 Green Bay Ave., Pants.—One story frame. Goods made for Mahler & Albenberg Co. Mother and daughter working; closet conditions not very good; work done in living room; entered direct; enough heat, light and air; needs no changing or renovating; no vermin or stench. Sanitary condition not good.

Gusta Kruger, 1298 Third St., Knit Goods.—Two story frame. Work done for Great Western Knitting Co. Two sisters working; closet conditions good; work done in living room; contains no bedding, etc., or cooking utensils; direct entrance; enough heat, light and air; needs no changing or renovating; no vermin or stench. General condition good.

John Beaman, 1135 Buffum St., Vests.—Three members of family working in living rooms of a two story frame building. Sanitary condition good.

August Luthercsky, 869 Sobeski., Coats.—One story and basement frame. Work done for Friend Bros. & Co. Father and 3 children working, all over 16. Closet condition not very good. Work room not used as or connected with living or sleeping rooms; contains no bedding, etc., or cooking utensils; direct entrance; not well ventilated. Sanitary and general conditions poor.

INSPECTION OF ROOMS WHERE WORK IS DONE BY ONE PERSON
ALONE, NO REGULAR HOURS BEING KEPT.

Miss Zwalina, 382 7th St., Shawls.—Work done in sleeping room; enough heat, light and air; no changing or renovating needed; no vermin or stench. Sanitary and general condition good.

L. Ferch, 1815 Walnut St., Vests. Work done in living room 12 x 14 x 8'; enough heat, light and air; no changing or renovation needed; no vermin or stench. Sanitary and general condition fair.

Mrs. A. Bulcke, 904 12th St., Knit Goods.—Work done in any of living rooms; enough heat, light and air; no changing or renovating necessary; no vermin or stench. Sanitary and general condition good.

Fred Rosenthal, 350 16th St., Custom Tailoring.—Work room opens into living rooms; enough heat, light and air; no changing or renovating necessary; no vermin or stench. Sanitary and general condition good.

J. Kubesch, 1315 Lloyd St., Custom Tailoring.—Work room opens into living room; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

Frank Gutzmer, 636 10th St., Custom Tailoring.—Work done in kitchen; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

A. Otto, 752 20th St., Custom Tailoring.—Work done in living room; enough heat, light and air; no vermin or stench. Sanitation fair; general condition all right.

Anton Herbeck, 691 Buffum St. (rear), Custom Tailoring. Work room connected with living rooms; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

Mrs. A. Hoeft, 386 12th St., Knit Jackets.—No regular room; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

Louis Let, 662 12th St., Custom Work.—Work room not used for living or sleeping purposes; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

Mrs. Rea Schleilin, 748 10th St., Knit Goods.—No particular room used; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

F. Golles, 821 12th St., Overalls.—No particular room; enough heat, light and air; no vermin or stench. Sanitary and general condition fair.

August Schwand, 834 9th St., Custom Tailoring.—Work room connected with living room; enough heat, light and air; no vermin or stench. Sanitary and general condition fair.

John Gilsdorf, 892 4th St., Custom Tailoring.—Work room opens into dining room; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

F. A. Poetsch, 709 1st St., Custom Tailoring.—Work room connected with sitting room and kitchen; enough heat, light and air; no vermin or stench. Sanitary and general condition fair.

August Born, 828 8th St., Custom Tailoring.—Kitchen used as work room; enough heat, light and air; no vermin or stench. Sanitary and general condition fair.

Gust Keil, 1411 Chestnut St., Custom Tailoring.—Work room connects with sitting room; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

O. Palme, 343 5th St., Custom Tailoring.—Kitchen and living room used as work room; enough heat, light and air; no vermin or stench. Sanitation fair. Work conducted throughout dwelling.

Paul Tretma, 624 12th St., Custom Tailoring.—Work room connected with sitting room; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

Anton Schlecta, 703 13th St., Custom Tailoring.—Work room connected with living rooms; enough heat, light and air; no vermin or stench. General and sanitary conditions good.

L. Hassell, 597 10th St., Custom Tailoring.—Work room opens into dining room; enough heat, light and air; no vermin or stench. General and sanitary condition good.

Ferd Schieba, 1015 18th St., Custom Tailoring.—Dining room used for shop; enough heat, light and air; no vermin or stench. Place very clean and sanitary.

Mrs. Ebert, 1057 7th St. (rear). Men's Jackets.—No special rooms used; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

in any of living rooms; enough heat, light and air; no vermin or stench. Sanitary and general conditions good.

Bertha Ott, 862 22d St., Men's Vests.—Work done in sitting room; enough heat, light and air; no vermin or stench.

John Bruman, 782 23d St., Men's Coats.—Work done in kitchen; enough heat, light and air; closets not disinfected. Sanitary and general condition fair.

Mrs. Lempke, 749 23d St., Jackets.—Work done in sitting room; enough heat, light and air; no changing or renovation needed; no vermin or stench. Sanitary and general condition good.

Eliza Stoltenberg, 792 22d St., Vests.—Work done in sitting room; enough heat and light, but needs renovation; sanitation not good. General condition fair.

Mrs. E. Otlo, 1373 2d St., Knit Goods.—Work done in living room; enough heat, light and air; free from vermin and stench. Sanitary and general condition good.

Mrs. Behrend, 1193 Island Ave., Pants.—Work done in living room; enough light, heat and air. Sanitary and general condition good.

Alvina Keison, 1084 Island Ave., Pants.—Work done in living room; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

Mrs. T. Rodtke, 1356 Richard St., Knit Goods.—Work done in living room; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

Mrs. D. Pflager, 1352 Richard St., Knit Goods.—Work done in living room; enough heat, light and air; no vermin or stench. Sanitary and general condition fair.

H. Bergman, 731 22d St., Pants.—Work shop not used as living or sleeping room, but is connected with kitchen; enough heat, light and air; sanitation not good. General condition not very good.

Lizzie Henp, 2108 Lisbon St., Men's Coats.—Work done in dining room and kitchen; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

Mrs. Minnie Rodtke, 1356 Richard St., Knit Goods.—Work done in living rooms; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

Bertha Gennerich, 2015 Elm St., Jackets.—Work done in kitchen; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

Agatha Lehleiter, 1610 Walnut St., Vests.—Work done in living room; enough heat, light and air; no vermin or stench. Saitary and general condition good.

Mrs. Lemke, 1486 3d St., Knit Goods.—Work done in living room; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

Mrs. J. E. Jones, 1348 Green Bay Ave., Knit Goods.—Work done in living room; enough heat, light and air. Sanitation and general condition fair.

Mrs. Boctel, 1340 2d St., Pants.—Work done in living rooms; enough heat, light and air; closets not disinfected; sanitation poor; changes and renovation are needed. General condition poor.

Anna Hahn, 1808 Walnut St., Vests.—Work done in sitting room; enough heat, light and air; no vermin or stench. Sanitary and general condition good.

Mrs. Heup, 1458 3rd St., Neckties.—Work done in living room; enough heat, light and air; no vermin or stench. Sanitary and general condition fair.

DEDUCTIONS FROM REPORTS MADE OF WORK ROOMS NOT AFFECTED BY THE SWEAT SHOP LAW.

Inspections were made of work rooms in Milwaukee not embraced within the requirements of the sweat shop law because the work was being done by one or more members of the immediate family. The reports of these inspections when analyzed show the following facts:

Number of inspections of this class, 65.

Number of persons working, 101: 34 males, 67 females.

In 31 cases the dwelling in which the work is done is owned by some member of the family.

In 51 cases the work room is on the first floor; in the remaining 14 cases the work is either done on the second floor or in no particular room.

In 45 cases the work rooms are also used for living and sleeping purposes. In 18 cases while work rooms are not used for living or sleeping they are connected by openings with such rooms.

In 2 cases the work rooms are entirely disconnected with living and sleeping rooms.

In 42 cases there is a direct outside entrance to workrooms. In the remaining 23 cases entrance is through living rooms.

In 63 cases the reports show sufficient light, heat and ventilation. In 3 cases there is a defect in the ventilation.

As to sanitation the closet arrangements are reported good in 48 cases, fair in 12 cases, poor in 5 cases.

In 59 cases the rooms are free from vermin and stench, and no changes or renovation is needed, while in the 6 remaining cases the reverse is true.

In 50 case the general conditions are reported good, in 11 cases fair, in 4 cases poor.

It appears from the analysis given of the reports of inspection that the most demoralizing features of the so-called sweat-shop system of the large cities of other states do not exist in Wisconsin. No case is reported that would be called aggravated in comparison with the average case of New York and Chicago.

Of the work rooms in Milwaukee within the scope of the sweat-shop law,

- 70 per cent. were complying with the provision which prohibits any connection between shop and dwelling rooms.
- 97 per cent. were complying with the requirement prohibiting the use of work room for living and sleeping purposes.
- 96 per cent. were complying with the requirement that work room shall contain no beds, bedding, or cooking utensils.
- 76 per cent. were complying with the provision as to direct outside entrances, separate stairways, etc.
- 99 per cent. were obeying the provision requiring "sufficient light, heat and ventilation."
- 100 per cent. were complying with the requirement for at least 250 cubic feet of air space during the day and 400 at night; the average employe being provided with more than 3 times the air space named in the law as the minimum.
- 80 per cent. were obeying the provisions of law requiring suitable water closets, and separate closets for the sexes.
- 90 per cent. were complying with the requirement that premises shall be kept in a clean and wholesome condition, that closets shall be disinfected, and that rooms be free from vermin and obnoxious odors.
- 90 per cent. wer complying with the provisions of the child labor law prohibiting the employment of children under 14 in work shops.

- 55 per cent. were complying with the provision of the child labor law that children under 16 shall not be employed unless they furnish an affidavit from parents as provided by law.
- 62 per cent. of the buildings in which work is done are owned by the proprietor of the "shop" or some member of his family.
- 99 per cent. of the buildings in which this work is done are 2 stories or less.
- 93 per cent. of such buildings are one story only.
- 73 per cent. of the material is procured from, and work performed for two wholesale clothing firms in Milwaukee who keep records required by law and are in sympathy with the objects of the sweat-shop and child labor laws.
- 92 per cent. of the work is done for wholesale clothing firms, and
- 8 per cent. for merchant tailors, knit goods dealers, and for consumers at retail.

While the conditions in Wisconsin are not discouraging when compared with other states, the legislation of 1899 was timely and necessary to largely prevent or regulate the sweating system at its inception. Laws passed to abate this evil when it is thoroughly fastened upon a community, are less effectual than laws which name positive conditions tending to prevent their existence.

Persistent effort and vigilance used in preventing the introduction and spread of unhealthful and unsanitary conditions is much more successful though less appreciated by the public than if employed in trying to uproot those which have been firmly fixed. Add to this the other fact that legislative power vested in state officers to change established conditions entails great suffering upon such helpless people as may be dependent upon their continuance.

Our law provides that no premises shall be used except by the immediate family for making certain goods unless the requirements of law are complied with.

The worst forms of the sweating system having been largely

forestalled by the act, the provisions necessarily had to be met as a prerequisite to embarking in the business. There is comparatively little suffering involved in the enforcement of the law, as obedience to it precedes the establishment and growth of clothing manufacture.

OTHER INSPECTIONS.

In previous pages of this division the results of inspections have been given in detail including the location of, and the names of parties controlling the premises. Beginning with the tables of most exhaustive detail, it has been sought by a series of auxilliary tables, statements and summaries of lessening detail to exhibit sufficiently lucid and specific information as to all buildings—the condition of which the Bureau was charged with knowledge,—and also deductions from the facts set forth in numerous sub-tables and comparative exhibits. It has been thought unnecessary and cumbersome to continue this plan as to the record of inspections which follow—the details being of less value because more uniform in character—than in the case of industries previously treated. The plan is therefore simplified, aggregate figures only being here published. These have been compiled from detailed tables filed in the department covering the inspection of hotels, mercantile establishments, office buildings, assembly halls, schools, churches, hospitals, etc., and armories. It is believed that adequate though brief comment is made in each instance.

HOTELS.

The total number of hotels inspected was 102, classified as follows:

Brick, 5 stories in height	3 or 2.9%
Brick, 4 stories in height	8 or 7.8%
Brick, 3 stories in height	57 or 55.9%
Brick, 2 stories in height	2 or 2 %
Stone, 3 stories in height	1 or 1 %
Frame, 4 stories in height	2 or 2 %
Frame, 3 stories in height	27 or 26.4%
Frame, 2 stories in height	2 or 2 %
Total	102 100 %

The number of sleeping rooms contained therein was 3,872, and the average number of guests per day was 2,711. The total number of employes was 1,058, of which 416 or 39.3 per cent. were males, and 642, or 60.7 per cent., were females.

The number of orders issued was 163, the character of and the authority for which appear by the following summary:

HOTELS — LIST OF ORDERS ISSUED.

Showing the number and per cent. of orders of each class and the law under which the protection was required.

Classification.	Under what section of statutes of '98	Number.	Per cent.
Doors to 'swing out'.....	Sec. 4390	61	37.4
Fire escapes.....	Sec. 1636ee	17	16.4
Fire escapes repaired.....	Sec. 1636ee	4	2.5
Standpipes.....	Sec. 1636ee	4	2.5
Red lights.....	Sec. 1636g	33	20.2
Watchmen.....	Sec. 1636g	6	3.7
Notices posted.....	Sec. 1636g	33	23.3
Total.....		163	100 per cent.

MERCANTILE ESTABLISHMENTS.

The total number of mercantile establishments represented by this exhibit is 53. The total number of employes found therein was 1,144, of which 458, or 40 per cent., were males, and 687, or 60 per cent., were females.

More establishments were inspected, but the number here reported will fairly represent the whole number in the state as to those conditions which this Bureau is particularly charged by law to observe and correct.

The following is a summary of orders to the number of 219 which were issued by the inspectors where the laws were being violated, and where danger to the health and safety of employes or the public was apprehended.

MERCANTILE ESTABLISHMENTS—SUMMARY OF ORDERS ISSUED.

Giving the Number and Percentage of Each Class of Requirements.

Classification.	Number.	Per cent.
To provide seats for females.....	25	11.5%
Affidavits for children under 16	50	23 %
Doors to swing out	41	18.8%
Elevators guarded	2	.9%
To reduce working hours of minors to 10 hours daily....	51	23.4%
To discharge children under 14.....	49	22.4%
Totals	218	100 %

It has not been thought necessary to show the aggregate of employes affected by the various orders, which as they appear above do not exhibit the number protected or benefited thereby; to illustrate the result of the 49 orders affecting those under 14 years of age was the discharge of 450 children illegally at work.

The number of office buildings which were inspected is 55, classified as follows:

Stone, 5 stories in height	1 or 1.8%
Brick, 4 stories in height	6 or 10.9%
Brick, 3 stories in height	39 or 70.9%
Brick, 2 stories in height	6 or 10.9%
Frame, 3 stories in height	2 or 3.7%
Frame, 1 story in height	1 or 1.8%
Total	55 - 100 %

Orders were issued by inspectors to persons in control of these buildings as follows:

For fire escapes	7
To swing doors out	29
To provide separate closets for females	1
Total	37

ASSEMBLY HALLS.

The number of assembly halls inspected from time to time during 1899-1900 was 68, as follows:

Society halls.....	38	Seating capacity.....	8,262
Opera house	16	Seating capacity.....	9,270
Court house and town halls.....	14	Seating capacity.....	3,770
Total.....	68	Total seating capacity.....	21,302

In character the buildings so occupied were as follows:

Three story stone	1 or 1.5%
Two story stone	1 or 1.5%
Three story brick	2 or 3 %
Two story brick	24 or 35.2%
Two story frame	32 or 47 %
One story frame	8 or 11.8%
Total	68 100 %

PROSECUTIONS.

The following is a statement of the prosecutions instituted by this Bureau during 1899-1900. All cases were brought under the "Child Labor Act," Chapter 274, Laws of 1899.

In this statement is given the date of the trial, the fine or penalty imposed, and the section of the law under which the arrest was made in each case.

August 15, 1899, Jacob Rosenberg, Milwaukee, arrested for violation of Section 3, pleaded guilty, and sentence was suspended upon payment of costs.

August 22, 1899, Flora Hofmeister, forelady of Badger Manufacturing Co., Racine, for violation of Section 1, fined \$10.00.

August 26, 1899, Herman Moldenhauer, Sheboygan—made false affidavit—for violation of Section 10, fined \$5.00.

October 11, 1899, F. Labanski, Milwaukee—parent—for violation of Section 10, fined \$5.00.

October 14, 1899, Alex. Ciepluch, Milwaukee—made false affidavit—for violation of Section 10, fined \$5.00.

October 14, 1899, Mary Ciepluch, Milwaukee—mother—for violation of Section 10, \$5.00.

October 14, 1899, Frank Svoka, Milwaukee—father—for violation of Section 10, fined \$5.00.

October 15, Charles B. Schmidkonz, Milwaukee, foreman for Romadka Bros. Co., first entered plea of "not guilty," and afterwards plead "guilty." Judge suspended sentence upon payment of costs.

October 26, 1899, George Weinhausen, Milwaukee, superintendent for A. Geo. Schulz Box Co., for violation of Section 1, fined \$5.00 and costs.

October 27, 1899, H. Rauch, Milwaukee, superintendent for Milwaukee Brick Co., for violation of Section 1, fined \$10.00 and costs.

December 13, 1899, Carl Genoit, Milwaukee—false affidavit—for violation of Section 10, fined \$5.00.

December 13, 1899, Marianna Bonk, Milwaukee—false affidavit—for violation of Section 10; found guilty and sentence suspended by judge.

December 13, 1899, Marianna Czyzmowska, Milwaukee—false affidavit—for violation of Section 10, fined \$5.00.

December 13, 1899, Albert Mueller, Milwaukee, for violation of Section 10 fined \$5.00.

January 22, 1900, Albert Heimleben, La Crosse, foreman for La Crosse Candy and Cracker Co., for violation of Section 1, fined \$10.00.

January 31, 1900, G. M. Lindeman, Oshkosh, superintendent for Schmidt Bros. Trunk Co., for violation of Section 2, fined \$10.00.

January 31, 1900, Wm. Morgan, Oshkosh, superintendent Morgan Co., for violation of Section 1, fined \$10.00.

January 31, 1900, John Currie, Oshkosh, superintendent Oshkosh Furniture Co. for violation of Section 1, fined \$10.00.

February 13, 1900, Isadore Steinhart, Milwaukee, manager Fernekas Candy Co., for violation of Section 2, fined \$10.00.

March 23 1900, Badger Brass Co., Kenosha, for violation of Section 2, fined \$10.00.

April 19, 1900, Superintendent of A. H. Stange Co., Merrill, for violation of Section 1, fined \$10.00.

May 23, 1900, Tim O'Brien, Menasha, sub-contractor for Menasha Wooden Ware Co., for violation of Section 1, fined \$10.00.

May 23, 1900, Henry Boehenlein, Menasha, sub-contractor for Menasha Wooden Ware Co., for violation of Section 1, fined \$10.00.

May 23, 1900, James Kelley, Menasha, sub-contractor for Menasha Wooden Ware Co., for violation of Section 1, fined \$10.00.

May 23, 1900, Wm. Karrow, Menasha, sub-contractor for

Menasha Wooden Ware Co., for violation of Section 1, fined \$10.00.

May 23, 1900, Charles Koepfel, Menasha, sub-contractor for Menasha Wooden Ware Co., for violation of Section 1, fined \$10.00.

May 23, 1900, J. D. Lammell, Menasha, superintended Menasha Wooden Ware Co., for violation of Section 1, fined \$10.00.

May 23, 1900, W. W. Turncliffe, Menasha, foreman for Menasha Wooden Ware Co., for violation of Section 1, fined \$10.00.

June 15, 1900, each of the following firms in Sheboygan, for violation of Section 2, fined \$10.00 each and costs:

Superintendent Dillingham Manufacturing Company.

Superintendent Garton Toy Company.

Superintendent American Manufacturing Company.

Superintendent Mattoon Manufacturing Company.

Superintendent Sheboygan Knitting Company.

Superintendent Sheboygan Cigar Mould Company.

Superintendent Frost Veneer Seating Company.

Superintendent American Hide and Leather Company.

June 22, 1900, Superintendent Gurney Refrigerator Co., Fond du Lac., for violation of Section 2, fined \$10.00.

June 22, 1900, Superintendent Bowen Manufacturing Co., Fond du Lac., for violation of Section 1, fined \$10.00.

October 19, 1900, Julius Simon, Milwaukee, manager Boston Store, for violation of Section 1, fined \$10.00.

October 20, 1900, Gust Laren, Milwaukee, superintendent for F. A. Walsh Co., for violating Section 1, fined \$10.00.

December 8, 1900, August Kolter, Milwaukee, foreman Northwestern Malleable Iron Co., for violating Section 2.

December 8, 1900, C. E. Morehouse, Milwaukee, superintendent for Heim Specialty Co., for violating Section 2. Fine suspended.

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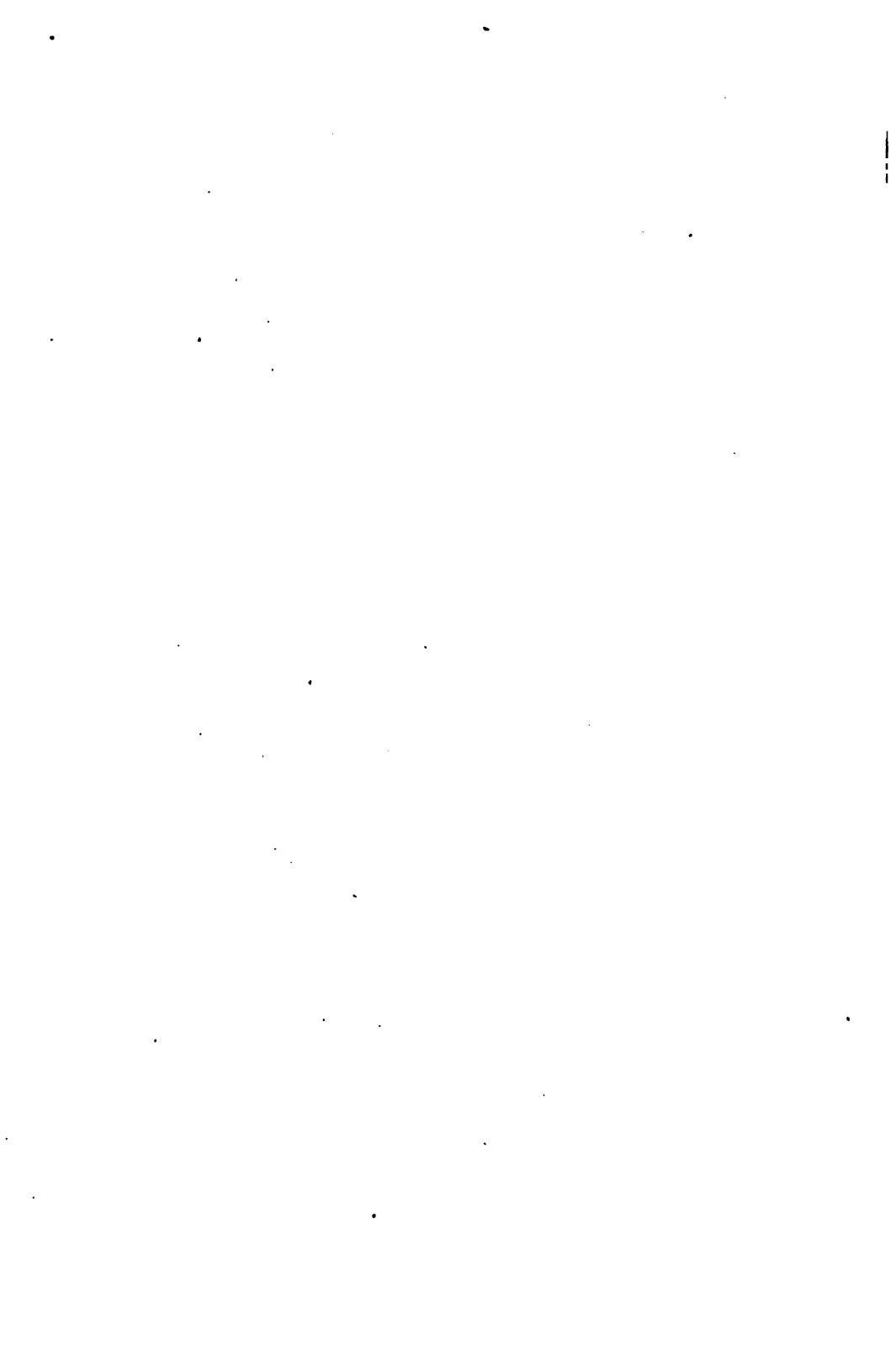
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BIENNIAL REPORT

OF THE

COMMISSIONERS OF FISHERIES

OF WISCONSIN

For the Years 1899 and 1900.



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1901

COMMISSIONERS.

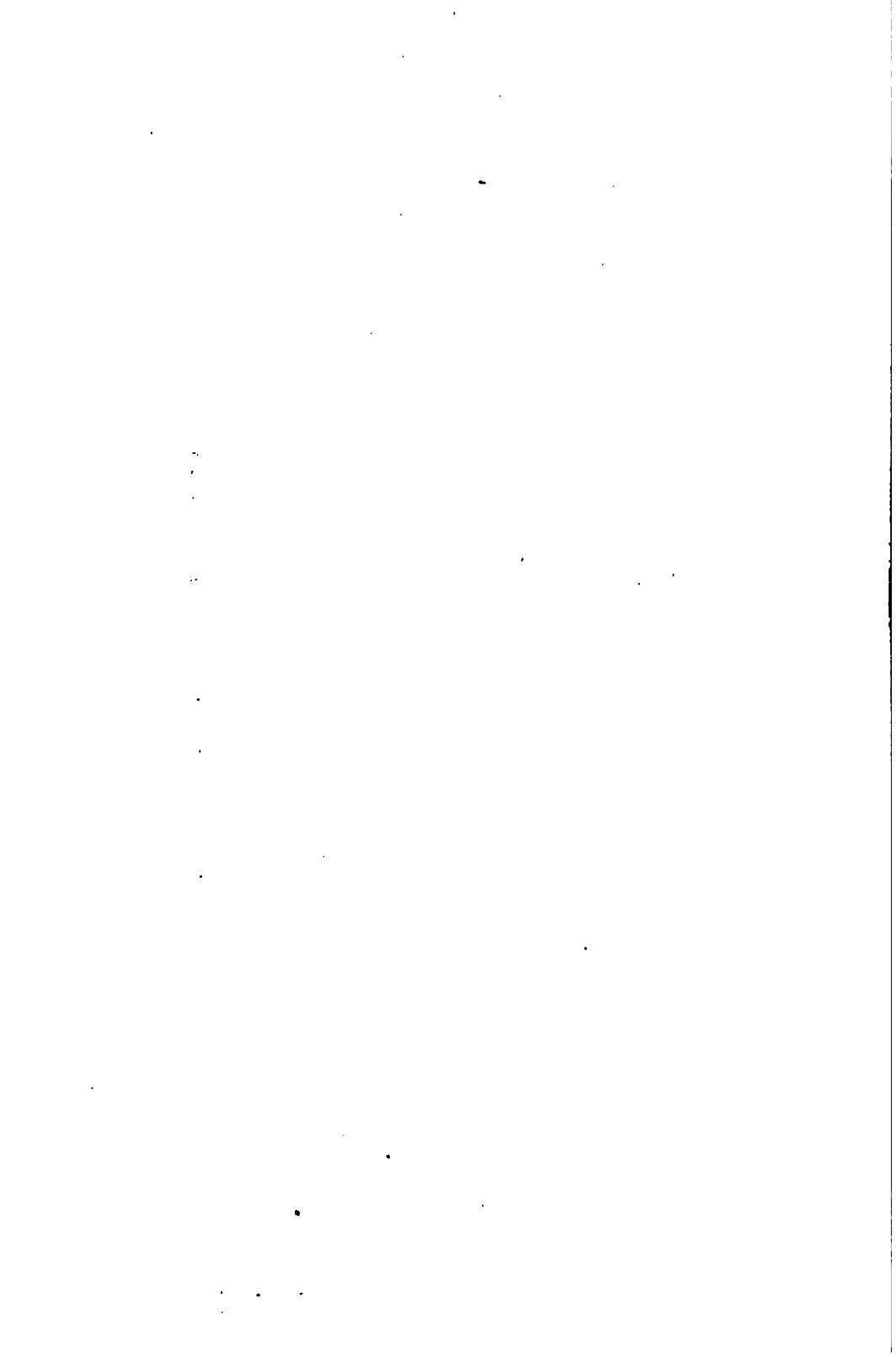
THE GOVERNOR, *ex-officio*.

EDWIN E. BRYANT, PRESIDENT.....	Madison.
EDWARD A. BIRGE, SECRETARY.....	Madison.
CALVERT SPENSLEY, TREASURER.....	Mineral Point.
JAS. J. HOGAN	La Crosse.
WILLIAM J. STARR.....	Eau Claire.
CURRIE G. BELL.....	Bayfield.
HENRY D. SMITH.....	Appleton.

JAS. NEVIN, SUPERINTENDENT OF HATCHERIES.....Madison.

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REPORT

OF THE

Commissioners of Fisheries.

To the Honorable, the Legislature of the State of Wisconsin:

Pursuant to the requirements of the statute (R. S. 1497) the Commissioners of Fisheries respectfully submit this report of their transactions for the biennial period ending September 30, 1900, and also including the transactions to December 31st, 1900, inclusive.

These periods have been of much activity in the extension of the operations under charge of the Commission. The propagation and distribution of the several varieties artificially propagated has been vigorously prosecuted. Considerable has been done in the transplanting of fish full grown. Experiments have been made in propagation of black bass and muskellunge, with a view to larger output in that direction. The completion of the ponds and grounds at the Bayfield hatchery and the enlargements of the building and facilities at the Oshkosh hatchery station have been the objects of much labor and considerable expense; a summary of which is given in the following pages.

Commissioners' Report.

PROPAGATION AND DISTRIBUTION.

The distribution of fry from the several hatcheries and stations for the biennial period is as follows:

	1899.	1900.
Madison Hatchery—		
Brook and brown trout fry	1,442,000	1,658,000
Rainbow trout fry	1,070,000	1,244,000
Bayfield Hatchery—		
Brook trout fry	651,000	585,000
Wall-eyed pike fry	16,520,000	3,000,000
Lake trout fry	11,772,000	22,037,000
Oshkosh Station—		
Lake trout fry	5,076,000	8,760,000
Wall-eyed pike fry	43,870,000	66,850,000
Total output	80,201,000	104,134,000

The gathering of lake trout and whitefish eggs in the great lakes is always attended with uncertainty. The present year, owing to weather conditions, was one of the most unfavorable experienced for many years, as is reported by the United States Fish Commission and the several states engaged in that work. No pains were spared by the Superintendent during the season just closed; and the efforts of the Commission were, under the circumstances, quite successful, though our showing is not as large as in some previous years.

TRANSPLANTING OF FISH.

In 1899, some 15,000 white bass were transplanted from the lakes where most abundant to the waters of Waukesha county. The results of this work are beginning to be manifest and fully warrant its continuance. In 1900, about 3,600 sterile fish were transplanted from the hatchery, mostly rainbow trout, and placed in suitable streams, as shown in the accompanying tables.

Commissioners' Report.

STOCK OF BREEDING FISH ON HAND.

The stock of breeding fish on hand, at the present time, is as follows:

Madison Hatchery—

Brook trout, 1900 hatch.....	15,000
Brook trout, 1899 hatch	6,050
Brook trout, two years old and over.....	8,515
Brown trout, two years old and over.....	1,228
Rainbow trout, 1900 hatch	10,000
Rainbow trout, 1899 hatch	8,303
Rainbow trout, two years old and over.....	10,276
Total	57,373

Bayfield Hatchery—

Brook trout, 1900 hatch	27,600
Brook trout, 1899 hatch	12,983
Brook trout, two years old and over.....	5,446
Rainbow trout, 1900 hatch	18,476
Rainbow trout, two years old and over.....	5,014
Brown trout, various ages	1,363
Total	70,882

CAPACITY OF HATCHERIES.

The stock carrying capacity of the waters at the two hatcheries is at Madison about 60,000; at Bayfield 300,000. The raising of a stock of full grown breeders is the work of time; but efforts are made to increase our stock, and henceforward our output of brook and rainbow trout from the Bayfield hatchery will continue to increase. The supply of water is ample; and our pond surface is more than four times that at Madison, and capable of much extension, with comparatively small added expense. The station at Oshkosh is used only for hatching fry from eggs gathered in the lakes, and is well adapted for the purpose.

BASS AND MUSKELLUNGE.

Experiments have been conducted at Madison and Bayfield for propagation of black bass. The water and grounds at Mad-

Commissioners' Report.

ison are unfavorable. At Bayfield, it is hoped that results may prove more favorable, though at this writing problematical. Experiments will, during the coming season, be made in the waters near Minocqua, where it is confidently believed that both bass and muskellunge can be propagated by saving the adult fish in the proper season. No demand is now more eager than for these game fish. The black bass, in particular, is now propagated successfully in Michigan and elsewhere by keeping the fish in ponds and suitable spawning beds. They cannot be stripped and the eggs hatched in trays, as is the case with trout, pike and whitefish. No reasonable pains will be spared by the Commission to extend the propagation and distribution of these varieties in all suitable waters; and experiments will be tried to secure the best results at minimum cost.

DEMAND FOR FISH AND FRY.

The demand for fish and fry continues to exceed our capacity to supply, though within the last few years the demand from the southern part of the state has diminished. The dry seasons and the cultivation of the soil have dried up many small streams and rivulets, where once trout thrived and multiplied. But in our northern waters, the supply can only be kept up by liberal and frequent stocking; the streams and lakes are becoming great resorts in the open seasons, and will continue to be so. Sportsmen from other states come in great numbers, spend money freely and add to the resources of the state. The drain upon the fish supply must be met by increased propagation. No expenditure, the Commission is assured, brings a larger return to the people, in greater food supply, in money brought into the state, and in profitable occupation of large numbers of our people.

Commissioners' Report.

PERMANENT IMPROVEMENTS.

During the past two years expenses have been incurred in permanent improvements as follows:

	1899.	1900.
Bayfield Hatchery	\$2,444 00	\$4,402 84
Madison Hatchery .....	.....	.....
Oshkosh Station	1,582 74	271 68

The Madison hatchery has need of some improvements in the way of repairing sidewalks and planking ponds, which will be done the present year. The need of completing the appliances at Bayfield has required all the funds that could be spared from current expenses. With the exception of the hatchery at Madison all the property of the Commission is now in excellent condition.

CURRENT EXPENSES.

The running expenses of the hatcheries and the superintendence of the same has been as follows:

	1899.	1900.
Madison Hatchery	\$3,738 76	\$3,895 82
Bayfield Hatchery	5,980 35	6,366 66
Oshkosh Station	3,465 42	4,716 75

EXPENSES FOR TRANSPORTATION.

In 1899, the transportation expenses of the Commission, its officers and employes amounted to \$4,630.46; in 1900, they were \$4,003.88. For some months in 1899, 20 cents per mile were paid for the transportation of the fish car. Since that time the companies have hauled the car and transported fish cans, accompanied by messenger paying fare, free of charge; but the Commissioners, officers and employes have paid full fare in compliance with law.

Commissioners' Report.

FISH SPAWN NOW HATCHING.

The eggs now in process of hatching in the trays at this time are as follows:

Madison Hatchery—	
Brook and brown trout	1,716,000
Bayfield Hatchery—	
Brook and brown trout.....	1,116,000
Lake trout	23,400,000
Whitefish	10,400,000
Oshkosh Station—	
Lake trout	11,600,000
Whitefish	40,000,000
Total	88,232,000

Owing to the warm weather during the fall the fish were tardy in coming to their spawning grounds on the lakes; and the difficulty in getting spawn for the hatcheries from the great lakes was unusual and the results far below our hopes.

The change in the law making the closing season for trout and whitefish begin on the 16th day of October compels the Commission, in order to obtain a suitable supply of the spawn of these fish, to make contracts with fishermen who have nets, boats, a tug and other equipments for fishing on an extensive scale. The law (Ch. 311, Mar., 1899) authorizes the Commission to take fish at all seasons from the outlying waters for stocking other waters or for the purpose of securing eggs for artificial propagation, and to dispose of said fish in such manner as they deem for the best interest of the state. Under this authority, contracts have been made with responsible fishing companies to use their outfits in fishing in the water during the spawning season. Our agents and employes were on the boats to strip and melt the spawn as soon as the nets were raised. The fishermen paid under these contracts one and one-half cents per pound for the fish thus caught. From this source our eggs were obtained and the fish thus taken brought in the sum of \$280 and expenses in 1899; and \$1,859.56 in 1900, which

Commissioners' Report.

last item was sufficient to defray the expenses of the men employed on the boats; and also nearly sufficient for the procuring of 40,000,000 whitefish eggs, the product of which will be deposited in Lakes Superior and Michigan. The fishermen contracting with the Commission made no more than a fair profit, as we are informed; and this arrangement, which was the only one practicable to be made, the Commission "deems to be for the best interests of the state."

The Commissioners bear testimony to the faithful and diligent services of Mr. Jas. Nevin, the superintendent. On him has devolved the care of the several hatcheries, the prosecution of the work of gathering eggs, their transportation to the hatcheries, and the prosecution of the improvements. The energy and judgment displayed has, as the Commission is convinced, enabled us to show such large results in the completion of our hatcheries and their equipments and for the variety of enterprises conducted under our charge to increase the fish supply of the state.

The semi-annual reports of the Superintendent for the last two years, the report of the Treasurer of the Commission, and the report of the distribution of fry and fish are appended hereto and herewith.

Respectfully submitted,

EDWIN E. BRYANT, *Pres.*,
EDWARD A. BIRGE,
CALVERT SPENSLEY,
JAS. J. HOGAN,
WILLIAM J. STARR,
CURRIE G. BELL,
HENRY D. SMITH,
Commissioners of Fisheries.

Treasurer's Report.

TREASURER'S REPORT.

Statement for 1899.

1899.

Dr.

Jany. 1.	To balance on hand	\$24 00
	appropriations for 1899	26,000 00
Dec. 30.	rebates on railway mileage credentials.....	202 30
	cash for team sold at Bayfield hatchery.....	200 00
	A. Kalmbach for fish caught at 1c per lb.....	281 30
		<u>\$26,707 60</u>

Cr.

Dec. 31.	By salary, Jas. Nevin, supt., 12 mos.....	\$2,000 00
	salary, Arthur Sykes, clerk, 12 mos.....	890 00
		<u>\$2,890 00</u>

Madison Hatchery.

By salary, Val. Maag, foreman, 12 mos....	\$840 00
salary, Jas. Foy, 7 mos.....	350 00
salary, Frank Suthers, 3 mos.....	180 00
salary, Oscar Hutchinson, 3 mos.....	140 00
sundry employment	81 25
disbursements for fish food.....	1,096 92
disbursements, distributing fish	234 10
disbursements for supplies for barn....	166 60
disbursements, general supplies	178 09
disbursements, propagation of black bass	302 35
disbursements, propagation of pheasants	60 60
disbursements for trout fry for breeding	
purposes	50 00
miscellaneous expenditures	58 85
	<u>3,738 76</u>

Bayfield Hatchery.

By salary, Henry Sykes, foreman, 12 mos.	\$960 00
salary, Ervine Moline, 4½ mos.....	202 50
salary, Fred Carroll, 6 mos.....	300 00
salary, Bernard Holtman, 9 mos.....	325 00
salary, Jesse Smith, 2 mos.....	74 00
salary, Jas. Foy, 4 mos.....	200 00
salary, Frank Suthers, 2 mos.....	120 00
salary, Newton DeBrale, 4 mos.....	148 00
sundry employment, caring for spawn,	
etc.	1,109 17
disbursements for fish food	517 07
disbursements, distributing fish	55 76
disbursements for supplies for barn....	285 72
paid for team of horses.....	225 00
disbursements for general supplies....	287 78
disbmts. for permanent improvements...	2,443 12
disbmts., collecting pike spawn.....	233 45
disbmts., collecting lake trout spawn....	881 90
miscellaneous expenditures	55 00

8,423 47

*Treasurer's Report.**Oshkosh Hatchery.*

By salary, John Maag, foreman, 11 mos...	\$786 00	
salary, Robert Ripple, 2 mos.....	73 50	
sundry employment	105 25	
disbursements, collecting pike spawn...	674 29	
rent of water	139 98	
disbmts., distributing fish	171 66	
disbmts. for general supplies	254 08	
disbmts. for permanent improvements...	1,582 72	
disbmts., collecting lake trout spawn....	14 11	
disbmts., collecting whitefish spawn.....	224 75	
miscellaneous expenditures	23 80	
		4,048 14
By expenses, Jas. Nevin, 12 mos.....	280 46	
commissioner's expenses, 12 mos.	17 50	
disbursements repairing and maintaining fish car.....	34 28	
disbursements collecting and distributing white bass..	006 85	
disbursements collecting and distributing black bass..	528 49	
disbursements for premiums on insurance.....	83 15	
disbursements for printing, revenue stamps,, etc.....	131 05	
disbursements for transportation	4,630 46	
		\$25,412 61
To balance on hand, Jan'y. 1st, 1900.....		1,294 99
		<u>\$26,707 60</u>

Statement for 1900.

1900.

Dr.

Jany. 1.	To balance on hand.....	\$1,294 99	
	appropriations, 1900	26,000 00	
	Kling & Walker, on account, steam pump sold	45 00	
	F. Koehn, Sr., Fish Co., for fish caught as per contract	590 85	
	A. Kalmbach, for fish caught, per con- tract	1,243 70	
	J. Swanson for fish caught	1 25	
	T. Boutin for fish caught.....	5 05	
	O. Hadland for fish caught	4 10	
	G. Carlson for fish caught.....	3 60	
	Larson and Benson for fish caught.....	9 66	
	Ed. Boutin for fish caught.....	1 35	
			<u>\$29,190 55</u>

Cr.

Dec. 31.	By salary, Jas. Nevin, Supt., 12 mos.....	\$2,000 00	
	salary, Arthur Sykes, clerk, 12 mos....	940 00	
			<u>\$2,940 00</u>

Treasurer's Report.

Madison Hatchery.

By salary, Valentine Maag, 12 mos.....	\$875 00	
salary, Jas. Foy, 12 mos.....	600 00	
salary, Frank Suthers, 7 mos.....	455 00	
disbursements for sundry employment...	147 82	
disbursements for fish food	846 91	
disbursements for distributing fish	269 82	
paid for team of horses	200 00	
disbursements for supplies for barn....	158 27	
disbursements for supplies and equipment	307 00	
miscellaneous expenditures	36 00	
		<hr/>
		3,895 82

Bayfield Hatchery.

By salary, Henry Sykes, 12 mos.....	\$1,080 00	
salary, Hugo Nelson, 8 mos.	360 00	
salary, Wesley Jones, 4 mos.	180 00	
salary, Fred Carroll, 6 mos.....	317 94	
salary, Bernard Holtman, 5 mos.	200 00	
salary, Andrew Wahlquist, 2 mos.....	90 00	
salary, Robert Ripple, 2 mos.	87 78	
disbursements for sundry employment...	983 64	
disbursements for fish food.....	867 35	
disbursements for supplies for barn....	246 66	
disbursements for general supplies and equipment	460 83	
disbmts. for permanent improvements...	4,402 84	
disbursements, collecting pike spawn...	170 10	
disbmts., collecting lake trout eggs....	836 37	
disbmts., collecting whitefish spawn....	157 38	
disbmts., propagation of black bass.....	128 80	
disbursements, filling ice-house	90 50	
miscellaneous expenditures	109 31	
		<hr/>
		10,769 50

Oshkosh Hatchery.

By salary, John Maag, foreman, 12 mos...	\$864 00	
salary, Robert Ripple, 6 mos.....	220 00	
disbursements for sundry employment...	311 28	
disbursements, collecting pike spawn...	933 25	
rent of water	465 90	
distributing fish	266 97	
disbmts. for supplies and equipment....	395 93	
disbmts. for permanent improvements...	271 68	
disbmts., collecting lake trout spawn...	494 29	
disbmts., collecting whitefish eggs	698 69	
miscellaneous expenditures	46 44	
		<hr/>
		4,958 43

Superintendent's Report.

By disbursements, collecting and hatching pickerel spawn	\$224 21
disbursements, collecting and hatching muskellunge spawn	212 50
disbursements for brook trout eggs purchased.....	660 00
disbursements for transportation	4,003 88
disbursements, repairing and maintaining fish car....	143 58
disbursements for premiums on insurance of fish car and buildings	194 13
disbursements for revenue stamps, etc.....	38 16
expenses, Jas. Nevin, Supt., 12 mos.....	180 17
commissioners' expenses, 12 mos.	83 14
	<hr/>
	\$28,333 52
To balance on hand Dec. 31st.....	866 03
	<hr/>
	\$29,199 55
	<hr/>

SEMI-ANNUAL REPORT OF SUPERINTENDENT.

(For Six Months Ending June 30, 1899.)

To the Commissioners of Fisheries:

GENTLEMEN:—Since my last report to you at your annual meeting in January, the work of the Commission has consisted mainly of the collecting of fish ova and the hatching and distribution of fry and adult fish. The results of the last six months' work in these lines are highly gratifying. We could not wish for better success than we have had with the several species of fry distributed during the past season; and I take pleasure in assuring you that the fish were, with very few exceptions, planted in first class condition. The number of fish planted is as follows:

Madison Hatchery.

Brook trout	1,800,000	
Rainbow trout	950,000	
	<hr/>	2,750,000

Bayfield Hatchery.

Lake trout	12,000,000	
Brook trout	800,000	
Wall-eyed pike	18,500,000	
	<hr/>	31,300,000

Superintendent's Report.

<i>Oshkosh station.</i>		
Lake trout	5,000,000	
Wall-eyed pike	42,000,000	
		47,000,000
White bass		15,100
Total distribution, 6 mos.....		81,065,100

This is the largest number of fish that the Commission has ever distributed in one season. We have tried at all times to get the fish planted in waters that were adapted to them.

OSHKOSH STATION.

Last March we transferred some five millions lake trout eggs from the Bayfield hatchery to the Oshkosh station. The fry from these eggs were planted in Green Bay and Lake Michigan.

The collection of pike eggs from the Wolf River and Lake Winnebago was not as large as we expected. In fact, it might well be called a failure as compared with our collections on these waters in previous years. Up to three years ago we never failed to get all the fish and eggs from these waters that we could handle. We now find that on the grounds where we formerly got pike our nets are filled with perch about as soon as set. However, we took a very nice lot of eggs from Tomahawk Lake waters, which in a large measure supplied the deficiency from the Wolf River.

The water main which supplied the Oshkosh hatchery became solidly frozen last winter, from which it was evident to the Park authorities as well as ourselves that the building was not properly located when built. It was thought best to move the building, which was done before the spring crop of eggs was laid in. This building should now be lengthened some twenty-five feet. As it is at present, we have not half tank room enough to hold the fry when hatched, and no space is available for handling the cans during the shipping season. There should also be a stone foundation placed under the building, otherwise it should be set on posts. Also some ten rods of sewer connections should be made.

Superintendent's Report.

MUSKELLUNGE.

At Tomahawk Lake, where we collected a large number of pike eggs, we secured some forty muskellunge. Of this number we took eggs from only three fish. The remainder of the females had spawned before being taken. If we had been on the Tomahawk waters some ten days earlier with nets made for those waters, I believe we would have taken a good number of muskellunge eggs.

The muskellunge in these waters spawn earlier than the pike, while in "T" Lake, Sawyer County, they spawn after the pike have done.

We took three hundred thousand eggs from the three fish spawned. We placed these eggs in hatching boxes in the lake and kept them in these boxes until they were on the eve of hatching, when we finished taking pike eggs on the lake. We then took the muskellunge eggs and planted them in the thoroughfare between the two lakes.

BLACK BASS.

Last spring we built, at a trifling cost, eight small ponds at the Madison hatchery in which to make experimental tests of hatching black bass. The experiment, so far, has been a failure, as the greater part of the fish died a few days after they were placed in the ponds. The fish became covered with a fungus growth, from which it was evident that they had been roughly handled when they were caught.

As the water supply at the Madison hatchery continues to decline, I would like to transform this station into a black bass hatchery. I have my own ideas in this matter, and feel sure that this can be done successfully. At the same time I do not want to make any recommendations to your board touching this matter, the carrying out of which would necessitate extensive changes or extra expense, until I am fully satisfied as to the results.

I recently had a talk with Mr. Seymour Bower, Superintendent of Fisheries in Michigan, relative to this matter. Mr. Bower

Superintendent's Report.

has been experimenting with black bass for the past three years in three different localities. From what I know, and what I learned from Mr. Bowers, I feel satisfied that we can arrange a number of ponds at a small expense and that we can make a success of this work next season. These ponds should be built this summer and the breeding bass secured this fall so as to have them on hand for breeding purposes in the spring.

CONCLUSION.

When the Commission was at Bayfield last fall, there was some talk that Captain Pike wanted the land which lies between the ponds and the creek returned to him, as the Fish Commission has not used the land for the propagation of fish as was originally intended when Mr. Pike donated the land to the state. I have taken it upon myself to tell Mr. Pike that I heard one of the Commissioners express himself as being in favor of giving him the use of this land in exchange for earth from the hill for filling purposes in constructing the ponds. I assured him, however, that I had no authority to give him the use of the meadow in exchange for earth as suggested, as this is a matter for the Commission to take action on. I am of the opinion that Captain Pike expects the Commission to deal with this matter as suggested, and I hope that you will consider this question during your meeting and take some action in regard to it.

At the end of the first half of the year, the Commission is in much better circumstances, financially, than at the close of the same period in 1898 as is shown below:

Appropriation and balance for year, 1899.....	\$20,024 00	
Expenses, 6 months, ending June 30, 1899.....	9,406 50	
	<hr/>	
Balance on hand July 1st, 1899.....		\$10,617 50
Appropriation for year, 1898	\$20,000 00	
Expenses, 6 months, ending June 30, 1898.....	11,949 03	
	<hr/>	
Balance on hand July 1st, 1898.....		8,050 96
		<hr/>
Balance on hand July 1st, 1899, exceeds balance on hand July 1st, 1898		<u>\$2,568 52</u>

Superintendent's Report.

Appropriation for transportation, 1899.....	\$6,000 00
Expenditures for transportation, 6 mos.....	3,613 79
	<hr/>
Balance appropriation for transportation	\$2,386 21
	<hr/>

JAMES NEVIN,
Superintendent of Fisheries.

Madison, Wis., July 12, 1899.

SEMI-ANNUAL REPORT OF SUPERINTENDENT.

(For Six Months Ending December 31, 1899.)

To the Commissioners of Fisheries of the State of Wisconsin:

GENTLEMEN:—I submit for your consideration a report of the work done under my supervision for the past six months.

BAYFIELD HATCHERY.

At your meeting in Bayfield November 4th, 1899, you inspected the work which had been done in the way of building dams, embankments and ponds during the summer months. Owing to the exceptionally rainy season, this work cost about one-third more than it would have cost in an ordinary season. The heavy rains which occurred every few days made it impossible to work to advantage with teams and scrapers. Help was scarce and hard to keep when we got it, as the men had to work in the mud and slush. We were obliged to pay extra wages to keep the help, which added considerably to the cost of the work.

The collection of lake trout eggs has been larger this season than any previous season since the hatchery was established. We have 30,372,000 lake trout ova,—or, if taken by measure,

Superintendent's Report.

one hundred twenty-two bushels.—laid down on trays at this hatchery. From these figures you can form an idea of the vast amount of work necessary to take care of the eggs at this station. We were in hopes to have collected some five millions more ova, but were unable to do so.

We have experienced a greater loss of eggs from infertility than ever before. This is due to the employment of inexperienced hands to take the eggs, a condition which could not be avoided. It is impossible to get the same men year after year to take the eggs; and, owing to a spirit of competition among the men to see who could take the largest number, we got quantity but not quality.

The troughs which you ordered made at your meeting in July have not been built, but I expect to have them in position within the next thirty days. Up to this time we have not had use for them, but they will be a necessity as soon as the eggs begin to hatch.

The collection of brook trout ova was not quite as large at this hatchery as last year. There was a considerable loss of large trout in the flumes during the months of May and June, for which there was no apparent cause. The dead fish appeared to be in good condition when removed from the ponds from day to day. Prof. Birge examined some of these fish a year ago last July, but did not find any abnormal conditions which should have caused the loss. We have now transferred the large trout from the flumes to the large ponds constructed the past summer. Henceforward we anticipate only the ordinary loss, as the fish will have extensive range and plenty of water.

MADISON HATCHERY.

There has been but little done in the way of improvements or repairs at the Madison hatchery. The volume of water from the springs continues to decline, and I hesitate to recommend the expenditure of money for improvements here.

The black bass ponds have been built as ordered by you; and

Superintendent's Report.

the breeding bass were secured from the Wolf river, transported to the hatchery and placed in one of the large ponds. We obtained two hundred very fine specimens of the small-mouth variety.

The collection of brook and brown trout eggs was slightly less than last year. The whole number of brook and brown trout eggs taken was 2,011,000.

The trout ordered to Bayfield from this station have not been transported at this writing. However, this will be done between this date and the first of March. This has been deferred owing to a pressure of other work. The man in charge of the car has been employed constantly at other points taking black bass and collecting spawn. We are now enabled to do this work cheaper than at any other time.

OSHKOSH STATION.

At your July meeting you ordered a stone foundation placed under the hatchery building at Oshkosh, and an addition twenty-five feet long to be built to it. This work has been done. The contracts for the work were let to the lowest bidders. The total cost of the foundation, addition and painting was \$567.96.

This building was originally intended expressly for hatching pike ova. But Oshkosh being conveniently located for shipping fish to Green Bay and Lake Michigan waters, it was later decided to hatch lake trout and whitefish at this station, and to enlarge the building to accommodate such number of eggs of these species as we could procure.

DIFFICULTY WITH GAME WARDEN.

Owing to the passage of a law providing for a close season against catching whitefish and lake trout on the Great Lakes, it became incumbent upon us to secure the enactment of another law, during the last session of the Legislature, giving us authority to catch such fish as were required for the collection of

Superintendent's Report.

a sufficient number of eggs for the hatcheries. During the past fall, while making the collection of ova under this law, we became involved in some difficulties with a Deputy State Fish and Game Warden; and I am informed that certain charges have been made in connection with this work, which necessitates my making a plain and thorough statement of all my transactions in relation to it.

Last June I was at Sturgeon Bay with the fish car for the purpose of transporting to Madison some black bass which Mr. Albert Kalmbach had caught for us. Just before taking the train for Madison I remarked to Mr. Kalmbach that I expected to come to Sturgeon Bay to collect lake trout eggs for the Oshkosh hatchery. He requested that I let him know in due time and he would be ready to catch the fish for us. Some time during the latter part of August I received a letter from Mr. Kalmbach, inquiring if we intended to come to Sturgeon Bay to collect lake trout eggs. He said he would like to know if we intended coming to that point to collect our supply of eggs so he could order twine for the work. I laid this matter before President Bryant and explained it to him, and he instructed me to tell Mr. Kalmbach to order such twine as he needed for the work and that when the time came for us to collect the spawn we would contract with him to catch the fish for the State for the purpose of taking spawn.

When the time for collecting the spawn arrived, I reminded the President of our arrangement to contract with Mr. Kalmbach to catch the fish for us; and he drew such contract and forwarded to me at Bayfield. In that contract I put a provision that the expense of catching the fish should not exceed the value of the fish when sold, it being understood that the fishermen were to have the fish, after the spawn was taken, for catching them. We were to take the spawn from the fish for the hatcheries. I placed this proviso in the contract as I did not want the fishermen to hold a bill against the state for loss of nets or for work in case they should not catch fish enough to pay expenses, which

Superintendent's Report.

is often the case with fishermen. I was desirous of being on the safe side and of securing the state against loss.

After we had about completed our collection of lake trout eggs at Bayfield, where I had been for a month, I sent Mr. Horace Van Doozer, who has been an employe of the Fish Commission for several years, to Sturgeon Bay with authority to act as our agent in looking after the collection of eggs at that point. I left Bayfield on the 21st of October, arriving at Sturgeon Bay at midnight of the 22nd. On Monday, the 24th, it was evident to me that if the weather remained fine, the prospects were good for excellent fishing, and I concluded that the state should get something out of it. I suggested to Mr. Kalmbach that he pay all expenses of the men collecting eggs, including board. This he agreed to do. I told him that if I had this thing to do over again I would see to it that the state received one cent per pound for all the fish caught.

November 4th. You met at Bayfield, and I explained to you the situation at Sturgeon Bay and told you what I had done. I recommended that such action be taken as would secure to the state one cent per pound for all fish caught under the authority of the Commission for the remainder of the season; and that an effort be made to collect a quantity of whitefish ova, as it seemed to me that all indications pointed to an exceptionally large run of this species. I have collected eggs from the various spawning grounds in the neighborhood of Sturgeon Bay for the last fourteen years, and it was apparent to me that we were catching more large whitefish than I had ever before seen taken with lake trout on the same grounds. Knowing full well that you were as anxious as I to make a collection of whitefish spawn, I stated that I thought it possible for us to collect from fifteen to twenty-five millions whitefish ova.

You prepared resolutions in relation to the matter, and these resolutions were made a part of the original contract.

On the 8th of November we stopped all fishing for lake trout at Sturgeon Bay; and operations were begun in the vicinity of

Superintendent's Report.

Detroit Harbor on Washington Island, where we thought we would have good success catching whitefish. At this point I employed four boats: the "Fish Hawk," "Annie D.," "Knapp" and "Elsie M."

On the 11th of November I gave Mr. Kalmbach a permit allowing the "Fish Hawk," owned by the McDonald Bros. of Washington Island, to fish for us on the same conditions that his boats were fishing. The McDonald Brothers made their first lift on the 21st of November, nine days before the end of the close season. On the 22nd, Mr. Bissinger, Deputy State Fish and Game Warden from Green Bay, traveling on the steam tug "Columbia," which was patrolling Michigan waters for violators of the fish law, ran across the "Fish Hawk," and wanted to know by what authority they were fishing. He was informed that they were fishing for the state of Wisconsin. He asked for their permit and was told that Mr. Kalmbach, who was on shore at the time, had the permit; and if Mr. Bissinger would go ashore he could see it. This he refused to do, and gave them to understand that they were under arrest. Since that time the men who were aboard the boat have been arrested and bound over to the circuit court at Green Bay for trial.

I am advised that the Attorney General holds that each boat should have a permit to fish while engaged in fishing for us.

It has been my custom in such cases to select some man to represent us as our agent and give such person written authority to do the work. The man usually selected for this purpose is some regular employe of the Fish Commission or some person whom we have employed at various times for several years, who thoroughly understands the business. I have always made it a point to be on the fishing grounds in person to look after the fishing operations, if possible, but am obliged at times to entrust the work to others for a short time.

On the 15th of November I left the island with a quantity of eggs for the hatchery at Oshkosh. From Oshkosh I went home, this being my third visit home since the middle of Sep-

Superintendent's Report.

tember. Frank Suthers, a regular employe of the Fish Commission, had been acting as our agent in collecting eggs on Washington Island from the 24th of October, and was left in charge of the work in my absence. On the day that the Warden was abroad, Mr. Suthers had gone to Sturgeon Bay with the eggs collected in my absence, which he was to ship to the Oshkosh hatchery. He had arranged with one of the fishermen to take the eggs that were to be had while he was away.

On the 21st of November I left Madison to return to Washington Island to look after our interests, and had to lie over at Green Bay to attend to transferring the eggs that Mr. Suthers had brought up from the island; consequently I was in Green Bay the day the Warden made the arrest. On the day in question the Michigan Game Warden lifted eleven boxes of nets belonging to the McDonald Brothers, claiming that the nets were in Michigan waters. Mr. Bissinger claims that the lifting of the nets was a matter that he had nothing to do with, and that he was in doubt as to whether they were in Michigan or Wisconsin waters. The Michigan Warden took the nets with him, which I believe should not have been permitted by Mr. Bissinger until it had been fully decided as to whether they were in Michigan waters or not. From what I can learn, I am quite certain that the nets were in Wisconsin waters. This being true, I believe that the state is in honor bound to pay for the nets.

We collected 10,175,000 lake trout eggs and 2,000,000 white-fish eggs.

I lay before you the total amount, in pounds, of fish handled by Mr. Kalmbach during the six weeks of the close season. The book which I hand you containing these figures is Mr. Kalmbach's book of original entry, in which the weights were entered as the fish were weighed. They are in such form that you can readily see who caught the fish and the amount caught, so there can be no question as to the accuracy of the weights or as to who caught the fish. I also hand you vouchers for the money

Superintendent's Report.

paid out by Mr. Kalmbach for taking the spawn, which amount to \$449.04. Adding this amount to the sum paid by him to the Fish Commission in cash, \$281.30, gives a total of \$730.34 received by the state for this work.

I consider this a good showing, and I do not know of another Fish Commission in the United States or Canada which has been able to collect the eggs they required and at the same time secure to their credit, in addition, the sum of \$730.34. I must acknowledge, however, that we were favored throughout the season with exceptionally fine weather, without which we would not have been able to make as good a showing. As it was the fishermen were successful in securing a good catch of fish and made considerable money.

Other fish commissions of which I have knowledge that get their supply of spawn in this way, either give the fish to the fishermen for catching them or do their own fishing; and those who have done the latter have never caught enough fish to pay the expenses of catching the fish and gathering the spawn. I believe that we received all that we could reasonably ask from the men who caught the fish.

I am informed that charges have been made and insinuations floated around that some employe of the Fish Commission (presumably, I) received compensation for permitting fishermen to fish illegally under the guise of taking spawn. I have been unable to find where such charges originated, and therefore have no means of defense or of meeting the accuser face to face. If such charges have been made in your hearing, I trust you will spare no means or trouble to find their source, and that you will probe the matter to the bottom to ascertain if there is foundation for them. I ask you to "Hew to the line, let the chips fall where they will."

In conducting this business, I have strictly followed your orders. I have nothing to conceal. If I have erred in any particular, I am willing to acknowledge my error; but when my integrity is assailed, I only ask a thorough investigation and an opportunity for its defense.

Superintendent's Report.

Concluding, I desire to say, if the collection of spawn made during the season just past is not as large as we anticipated, it is not because we have not put forth an honest effort to make it so. It has been my aim each year to make the present year outdo the past in the number of fish distributed; and there is every prospect that the coming distribution will be the largest since the organization of the Fish Commission.

Respectfully submitted,

JAMES NEVIN,

Superintendent.

Madison, Wis., Jan. 10, 1900.

SEMI-ANNUAL REPORT OF SUPERINTENDENT.

(For Six Months Ending June 30, 1900.)

To the Honorable, the Commissioners of Fisheries of Wisconsin:

GENTLEMEN:—I submit here following a report of the operations of the several fish hatcheries and of other fish cultural work under my charge during the six months last past:

MADISON HATCHERY.

From the Madison hatchery there were distributed 1,689,000 brook trout in the various streams of the state.

During the winter and spring, 2,077,500 rainbow trout eggs were taken at this hatchery, from which we distributed 1,588,000 fry. Both the brook and rainbow trout were, without exception, reported as in good condition when planted.

We endeavored to plant as many of the rainbow trout as possible in the larger streams of the state, as they seem to do best

Superintendent's Report.

in the large streams. This fish is now found in most of our streams, and the State is entitled to full credit for their introduction wherever found in our waters.

I believe there is a larger volume of water coming from the springs at the Madison hatchery this summer than last. The water in the ponds is clearer than it has been for three years past.

We experienced a considerable loss in the brook trout fry, retained at this hatchery for breeding purposes, the first two or three weeks after they were transferred from the hatching troughs to the ponds. This fry was for the most part hatched from the eggs we purchased.

No unusual loss has occurred among the adult fish at this hatchery.

OSHKOSH STATION.

The Oshkosh station is proving to be one of great importance to the state. It illustrates what can be accomplished in hatching fish when we have suitable water for the purpose.

We distributed from this station some eight millions lake trout fry, all of which were planted in good condition in the waters of Lake Michigan and Green Bay. There were also distributed, in round numbers, 67,000,000 pike fry.

I had hoped to make the distribution of fish from this hatchery amount to one hundred millions, but was disappointed in not securing the desired number of breeding fish. I made an extra effort with men and nets to get the fish, but failed in a measure. If I had not incessantly used a seine under circumstances which I was told rendered the pulling of a seine impossible, we would have fallen far short of the number obtained.

BAYFIELD HATCHERY.

We distributed from the Bayfield hatchery 22,037,500 lake trout fry. This large number of fish was planted in Chequam-

Superintendent's Report.

egon Bay near the Fish Hatchery. There were also distributed 585,000 brook trout fry, which were planted in the streams in the northern part of the state within convenient distance for transportation from the hatchery.

We failed to get a supply of pike eggs for this hatchery. The men who were detailed to collect the spawn did not succeed in taking the spawning fish, notwithstanding they fished the same grounds from which we have taken spawn in former years. The fish were not there. A few eggs were taken, but they proved to be of poor quality and a very small portion of them hatched. Those that we did hatch,—some three millions,—were planted in Chequamegon Bay.

BLACK BASS.

Last October we obtained some two hundred small-mouth black bass from the Wolf River and transferred them to the Madison hatchery. They were an extra fine lot of fish, and were placed in one of our large ponds on the north side of the grounds to winter. We secured a large number of minnows and placed them in the pond for food for the bass. During the winter fifty-two of the fish died. One hundred forty-three were placed in the breeding ponds this spring, twenty of which died during the spawning season. The fish began to make their spawning beds about the 6th of June, there being from two to four beds in each pond. On the 20th of June the bass were examined, and it was found that all the small-mouth bass had spawned, and they were removed from the breeding ponds to the large pond in which they were wintered. Since the fish were taken from the breeding ponds I have examined the ponds and beds very carefully, but have failed to find any small bass. It is possible that when we come to take the water out of the ponds and we will find some fish. The large-mouth bass, which were placed in separate ponds from the small-mouth, are now on their beds spawning, but what the result will be I am unable to foretell. So far, our black bass work has not been a success.

Superintendent's Report.

MUSKELLUNGE.

While catching pike at Tomahawk Lake, we took ninety-five muskellunge, fifteen of which were females. We took the spawn from these females, amounting to some 700,000 eggs, but were unable to get sufficient milt to fertilize the eggs. We could not get ripe male fish at the time the eggs were taken, and we did not get as much milt from all the male muskellunge we caught as we ordinarily get from a single male pike. The consequence was, but a small percentage of the eggs were impregnated. These eggs and the fry hatched were planted back in Tomahawk Lake.

I find the muskellunge is a fish that will not bear confinement.

To make a success of this work, we will have to use a sturgeon gill net and take the fish at a time when they are paired off and seeking the shallows to spawn. The fish can be taken in the gill net at this time, relieved of their spawn, and returned to the water at once. It will be necessary to do this work at night; and as the fish go in pairs, if we can catch the ripe female, we will be quite certain to find the male in the same condition.

PICKEREL.

Last spring we undertook the propagation of pickerel to stock Lake Mendota. We caught nine hundred sixty-seven mature fish, and took spawn from two hundred sixty-two females to the amount of some ten millions ova. About seventy per cent. of this number of eggs were fertilized and hatched.

WHITE BASS.

We are now beginning to get results from the plants of white bass made in various inland lakes during the past three or four years.

About the middle of July I shall, with your permission, endeavor to collect a large number of white bass, this year's hatch,

Superintendent's Report.

in some of the shallow bays in Lake Winnebago. If we succeed in getting these small bass, we will be able to distribute them in larger numbers than we have the mature fish which we have handled in the past. The work can be done at much less expense than when we planted the large fish, as it will be done at a time when we will not have other planting to do.

TROUT OVA PURCHASED.

At your last meeting you authorized me to buy one million brook trout ova. After correspondence with several breeders, I finally purchased of the Penn Forest Brook Trout Co., Mauch Chunk, Penn., 880,000 eyed brook trout spawn at a cost of 75 cts. per thousand delivered at Madison. We retained 600,000 of these at the Madison hatchery and forwarded the balance to Bayfield. A large portion of this fry was placed in our breeding ponds at both hatcheries, and although the eggs were received in good condition, the fry turned out very poorly. We lost at least one-half of the entire lot both at Madison and at Bayfield.

The following table shows, summarily, the number of fish of each kind distributed during the past six months:

Brook trout	2,274,000
Rainbow trout	1,588,000
Pike	69,500,000
Lake trout	29,820,000
Pickereel	7,000,000
Muskellunge	100,000
Total	110,282,000

This is the largest number of fish ever distributed by the Wisconsin Fish Commission in one year.

RECOMMENDATIONS.

There is much which might be done at the Madison hatchery in the way of repairs; but, at the same time, we have so much work to complete at Bayfield this summer that our available funds will not permit of doing the necessary work at both hatch-

Superintendent's Report.

eries; and I believe we should get along at the Madison hatchery this year as things now stand. We will not suffer any inconvenience at the Madison hatchery this year under present conditions. Another year we will have the necessary funds to make all needed repairs and improvements. The sidewalks are being put in good condition at this writing.

The Oshkosh building should be repainted.

As you will visit the Bayfield hatchery, you will be able to note all that has been done and what we expect to do before the season closes, all of which I hope will meet with your approval.

JAMES NEVIN,

Superintendent of Fisheries.

Madison, Wis., June 30, 1900.

SEMI-ANNUAL REPORT OF SUPERINTENDENT.

(For Six Months Ending December 31, 1900.)

To the Commissioners of Fisheries:

GENTLEMEN:—I give here following my report on the operation of the several state fish hatcheries, the collection of fish ova, and other work in connection with the state fisheries for the six months ending December 31, 1900:

MADISON HATCHERY.

We have taken at the Madison hatchery 1,769,000 brook and brown trout eggs. We expected a larger number of eggs, but on account of the large number of barren females which we now find in our stock we cannot forecast with any degree of accuracy the yearly product of eggs. We have over two thousand

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unproductive females in our stock. If these fish had produced the average number of eggs obtained from the productive fish, we would have 2,413,000 eggs, or 644,000 eggs more than we now have.

The following table shows the number of fish in the ponds at the Madison hatchery:

Brook trout, 1900 hatch (estimated).....	15,000	
Brook trout yearlings ('99 hatch)	6,050	
Brook trout, two years old and over.....	8,515	29,565
Rainbow trout, 1900 hatch (estimated)	10,000	
Rainbow trout yearlings ('99 hatch)	6,303	
Rainbow trout, two years old and over.....	10,276	26,579
Brown trout two years old and over.....		1,228
Whole number of fish in the ponds.....		57,372

OSHKOSH HATCHERY.

We have been fortunate in securing a large supply of eggs for the Oshkosh hatchery during the season just closed. We have at this hatchery 40,000,000 whitefish eggs; also 11,600,000 lake trout eggs.

The lake trout ova was collected from Lake Michigan in the vicinity of Door county, Wis. To collect this spawn we entered into contracts with Mr. Albert Kalmbach of Sturgeon Bay, and the F. Koehn, Sr., Fish Company of Sheboygan to catch the fish for this purpose. Under these contracts the parties agreed to pay one and one and one-half cents per pound respectively, for all fish caught by them while they were fishing under our direction during the close season, our agents aboard the boats taking the spawn and receiving and weighing the fish at the docks. We received under these contracts \$1,859.56 for fish caught and paid for at the contract price.

It is perhaps worthy of note here that the fish were very tardy in coming on to the spawning grounds this year. I have been connected with the Great Lake Fisheries of this state and the Canadian government for the past thirty years; and each fall

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during that period I have collected eggs from the Great Lakes waters, but I never before knew the fish to spawn as late as they did the season just closed. At one time I despaired of getting any eggs, the fish were so late coming onto the reefs to spawn. The water and the weather were both unusually warm for the time of the year, and the fish did not put in an appearance until the first cold wave struck us. Very few eggs were collected until the 15th of November. From that date until December 1st we got all the eggs we wanted. Other years we have practically finished our spawning by the 10th of November.

BAYFIELD HATCHERY.

In the Bayfield hatchery we have 22,400,000 lake trout eggs, 10,400,000 whitefish eggs, and 1,116,000 brook and brown trout ova.

On account of the extreme lateness of the spawning season in Lake Superior and the refusal of the fishermen to pay for the privilege of fishing during the close season, we did not collect one-third the number of eggs from Lake Superior waters that we collected last year. Two-thirds of the lake trout eggs we now have at the Bayfield hatchery were gathered in Lake Michigan and shipped to Bayfield from Sturgeon Bay.

Each year since the Bayfield hatchery was established, the state has spent several thousand dollars there in necessary additions and improvements. This work is now about completed, and in the future requisite improvements and repairs can be made by the regular employes with very little expense for extra labor.

During the past fall we cut a carload of large willow scions from the trees at the Madison hatchery. These scions were trimmed and prepared for planting and shipped to Bayfield, where they were set out on the banks of the several ponds. They are set sixteen feet apart, and in a few years will be very useful ornaments to the grounds and ponds and will make the place

Superintendent's Report.

more attractive and picturesque. The trees as set are about six feet high. They grow into shade trees of nice size in from two to four years.

•
BLACK BASS.

For several years past, we have each fall gathered small black bass from the sloughs and lakes adjacent to the Mississippi river. By this means we have saved thousands of small black bass from inevitable waste, and stocked numerous inland lakes. The shallow waters from which these fish are taken are cut off from the river during the summer and finally dry up or freeze to the bottom during the winter and all the fish they contain are destroyed. It is of common occurrence with the people living along the river to find these sloughs dried up in the late summer or fall, and their beds covered with small black bass which have perished as the sloughs dried up.

Last fall we did not make the usual distribution from this source, as the water in the river was unusually high. The sloughs were kept full of water, and the fish were generally able to make their way out to the river without any interference on our part.

ANOTHER HATCHERY.

There is a large and increasing demand for black bass and muskellunge for stocking inland waters; and the popularity and usefulness of the Fish Commission will be largely subserved in the future by the propagation of both these species and their distribution in as large numbers as may be found practicable. To this end it is desirable that another hatchery be established.

Nature ordains all things most wisely. Man by artificial means hatches ninety-five per cent. of many species of fish, where by natural processes not one per cent. would be hatched. But it does not follow that man can improve upon all things pertaining to fish. Nature intended the black bass for large bodies

Superintendent's Report.

of water affording large range and abundant pasturage and extensive shoals and gravel bars for breeding.

The black bass, bullhead and catfish deposit their spawn and, unlike most other kinds, watch over it until it is hatched. When the young school rises, in the case of the black bass, the male fish guards and watches them, driving off all intruders that threaten to destroy his progeny.

Like all other spring spawning fish the black bass spawns in a rising temperature, and not until the water is above sixty degrees. After the spawning beds have been prepared, if there is a fall in the temperature of the water the bass will leave their beds and have been known in such a case to stay away from their spawning beds for several days or until there was a rise in the temperature of the water again.

The experience of fish culturists in trying to propagate them by artificial means teaches that the system to pursue in this work is to provide suitable breeding ponds where the bass can be under the constant observation of the person in charge of the work. The fish are permitted to spawn of their own volition and in their own way, though artificial nests have been provided in some instances. The Michigan Fish Commission find that they get better results from providing artificial nests or beds for the use of the bass in spawning. After the bass have spawned and the young are hatched, the parent fish are removed from the breeding ponds; but the young bass are permitted to remain until they are some two inches in length, when the water is drawn from the pond and the fish removed for planting in other waters.

The black bass are extremely predaceous at all ages, and no amount of food and painstaking care and attention will prevent them from devouring their smaller and weaker associates. They will persist in their cannibalism even under the exciting and unusual conditions attendant upon their transportation from the hatchery to distant waters for stocking purposes. On this account a large loss of young bass must always be expected by the fish culturist, for here the survival of the fittest, only, obtains.

Superintendent's Report.

I believe we have found an excellent site for a black bass and muskellunge hatchery, where all the necessary adjuncts for the successful propagation and distribution of these species are to be had. I refer to a place about one mile from Woodruff, on the C. & N. W. Ry., where a dam has been constructed by Mr. John Woodlock on a large creek for the purpose of getting power to run the dynamos which furnish the light for the villages of Woodruff and Minocqua. If this location is selected by your board for the establishment of a black bass hatchery the parent fish can be procured from adjacent waters, thus insuring a successful start.

Mr. Woodlock offers to furnish the necessary land and water rights free of charge so long as the same are used for the purposes of a fish hatchery. In my judgment no better place for such a hatchery can be found; surrounded as it is by so many lakes, provided with excellent railway facilities and an abundance of suitable water.

We have on our books several hundred applications for black bass for stocking inland waters, which we have but poor prospects of ever being able to fill from present sources of supply; and it would seem wise under the circumstances to establish a hatchery for the purpose of meeting this demand for a most excellent game and food fish.

JAS. NEVIN,

Superintendent of Fisheries.

Madison, Wis., Jan. 17, 1901.



APPENDIX.

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899.

Name and Address of Applicant.	Where Planted.	No. of Fish.
ADAMS COUNTY—		
William Flegel, Strong's Prairie	Jordansby Creek	2,500
George Winn, Strong's Prairie	Seaverson Creek	2,500
		5,000
ASHLAND COUNTY—		
C. A. Lamoreaux, Ashland	Pine Creek and Brchs.	6,000
	Fire Creek	6,000
	Creeks near Highbridge	12,000
	Creeks near Mellen	6,000
	Butternut Creek	6,000
		36,000
BARRON COUNTY—		
F. C. Wickenburg, Turtle Lake	Turtle Creek	6,000
E. A. Palmer, Turtle Lake	Spring Brook	6,000
Torger Olson, Dallas	Sioux Creek	3,000
D. A. Russell, Dallas	North Pine Creek	3,000
Harry Halverson, Dallas	Doe Creek	3,000
E. A. Pelton, Dallas	South Ring Creek	3,000
H. R. Rademacher, Barron	Cranberry Creek	3,000
J. A. H. Johnson, Cameron	Browns Creek	3,000
	Johnson Creek	3,000
	Fisher Creek	3,000
T. W. Borum, Barron	Four Mile Creek	3,000
Ben Thorsen, Barron	Red-eye Creek	3,000
DeWitt Post, Barron	Johnson Creek	3,000
D. D. Page, Barron	Barker Creek	3,000
M. T. Howard, Barron	Little Bear Creek	3,000
M. M. Eaubanks, Rice Lake	Little Bear Creek	3,000
Geo. Anderson, Rice Lake	Silver Creek	3,000
S. S. Morrison, Rice Lake	Hickey Creek	3,000
Sewell A. Peterson, Rice Lake	Ingalls Creek	3,000
P. E. Olson, Rice Lake	Rock Creek	3,000
		66,000
BAYFIELD COUNTY—		
F. Drummond, Drummond	Tributary of Long Lake ...	6,000
D. J. Estabrook, Washburn	Four Mile Creek	6,000
	Marengo River	6,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
BAYFIELD COUNTY—Con.		
H. H. Augusta, Iron River	Iron River	12,000
Ernest Horner, Hornersville	Muskeg Creek	6,000
L. H. Lien, Mason	Head of White River	6,000
C. A. Lamoreaux, Ashland	Nash Creek	12,000
Saml. Bally, Bayfield	Spring Creek	18,000
D. M. Maxey, Washburn	Long Lake Branch	18,000
H. P. Axleberg, Washburn	Four Mile and Sweeden Creeks ..	18,000
A. W. McCleod, Washburn	Four Mile and Sweeden Creeks	18,000
T. H. Robinson, Washburn	Sioux River	18,000
J. L. Sayles, Pratt	Pratt Creek	24,000
BROWN COUNTY—		168,000
Ben Smith, Green Bay	Potter Creek	5,000
J. L. Wilcox, Green Bay	Cold Spring Brook	5,000
BUFFALO COUNTY—		10,000
Henry Roettiger, Fountain City....	Schoepp Valley Creek	2,500
	Eagle Valley Creek	2,500
	Right and Left Brchs., Blasch Valley Ck.	5,000
	Heners Creek	2,500
O. J. Ward, Mondovi	Harvey Creek	2,500
	Dutch Creek	2,500
J. W. Whelan, Mondovi	Mill Creek	2,500
	Hoyt's Creek	2,500
	Hunters Creek ..	2,500
	Fifteen Mile Creek	2,500
W. L. Houser, Mondovi	Screener Creek	2,500
	Broom Creek	2,500
	Ford Creek	2,500
	Delton Creek	2,500
CHIPPEWA COUNTY—		37,500
John Ure, Jr., Badger Mills	Badger Mills Creek	6,000
R. W. Hendry, Chippewa Falls	Little Paint Creek	3,000
John Young, Chippewa Falls	Beaver Creek	3,000
C. A. Stanley, Chippewa Falls	Trout Creek	6,000
	Hay Creek	6,000
C. L. Christianson, Bloomer.....	McCann Creek	3,000
	Conway Creek	3,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
CHIPPEWA COUNTY—Con.		
Robert Seaverson, Sand Creek	N. Branch of Sand Ck.	3,000
Albert Moen, Cartwright	Seaverson Creek	3,000
H. W. True, Hawkins	Skinner Creek	6,000
		42,000
CLARK COUNTY—		
W. L. Morrison, Neillsville	Cawley Creek	5,000
John J. Servaty, Neillsville	Hewett Creek	5,000
Edward Nason, Lindsey	Deer Creek	2,500
O. M. Helm & Co., Humbird	Brch. of Halls Creek	6,000
Ben. P. Lanning, Northfield	Pigeon Creek	6,000
		24,500
COLUMBIA COUNTY—		
E. Hinkson, Poynette	N. Brchn., Bowen Creek ...	5,000
Sherman H. Hindes, Lodi	Spring Creek	5,000
Levi Reeves, Thurman	Head waters, French Creek	5,000
L. N. Coapman, Wyocena	Rocky Run	5,000
Geo. Hall, Rio	Duck Creek	5,000
C. W. Hall, Rio	South Branch of Duck Creek	5,000
M. D. Oleson, Rio	Duck Creek	5,000
P. W. McKenzie, Poynette	Poynette Creek	5,000
W. G. Bissell, Lodi	Spring Creek	7,500
		47,500
CRAWFORD COUNTY—		
•B. C. Palmer, Boydtown	Clear Branch	2,500
	Glynn's Branch	2,500
T. D. Hurlbut, Prairie du Chien	Grand Grey Creek	5,000
J. C. Rowley, Prairie du Chien	Lanes Creek	5,000
G. D. Gurdler, Gays Mills	Wells and Sand Creeks ...	5,000
J. A. Hays, Gays Mills	Bacon and Copper Cks.	5,000
D. R. Lawrence, Petersburg	Crow Creek	2,500
	Halls Branch	2,500
J. O. Davidson, Soldiers Grove	Johnson Creek	5,000
	Bear Creek	5,000
T. Garrity, Soldiers Grove	Knapps Creek	7,500
W. S. Manning, Soldiers Grove	Soldiers Grove Creek	5,000
	Trout Creek	2,500
C. G. Lester, Towerville	Tainter Creek	5,000
		60,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
DANE COUNTY—		
Geo. E. Roemhild, Black Earth	Norwegian Valley Ck.....	5,000
O. R. Herring, Cross Plains.....	Head of Black Earth Ck....	5,000
Edward Herring, Cross Plains	Head of Black Earth Ck....	2,500
F. W. Spaulding, Token Creek.....	Peterson's Creek	5,000
M. D. Perkins, Belleville	Milem and Howe Cks.....	5,000
	Storytown and Rose Cks...	5,000
W. W. Willoughby, Bascoe	Boning Creek	5,000
C A. Hanan, Oregon	South Branch of Badfish Creek	5,000
J. W. Emmons, Oregon	W. Branch of Badfish Ck ..	5,000
Elias Waterman, Oregon	Head of Badfish Ck.....	5,000
		47,500
DODGE COUNTY—		
H. B. Drake, Beaver Dam	Geffs and Dexter Cks.....	5,000
W. H. Thorpe, Beaver Dam	Shaw and Johnson Cks. ...	5,000
		10,000
DOOR COUNTY—		
Anton Henquinet, Gardner	Auguer Creek	5,000
Henry Overbeck, Jr., Sturgeon Bay.	Logan Creek	10,000
	Jacksonport Creek	5,000
		20,000
DOUGLAS COUNTY—		
N. Lucius Jr., Solon Springs	Brule River	6,000
Geo. H. Noyes, Milwaukee	Brule River	12,000
Jos. Lucins, Winneboujou	Brule River	12,000
H. E. Dotson, Gordon	Spring Brook	6,000
C. T. Campbell Brule.....	Brule River	12,000
		48,000
DUNN COUNTY—		
E. J. Newsome, Menomonie	Irvine Creek	3,000
A. C. Anderson, Menomonie	Annis Creek	3,000
W Schutte, Jr., Menomonie	Knights Creek	3,000
O. G. Anderson, Menomonie	Gilbert Creek	3,000
Gust Steiding, Menomonie	Lambs Creek	3,000
Victor Derimral, Menomonie	Annis Creek	3,000
		18,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
EAU CLAIRE COUNTY—		
William Henning, Fall Creek.....	Otter Creek	6,000
G. E. Bartz, Fall Creek	Beaver Creek	6,000
Henry Russell, Augusta	Bridge Creek	12,000
C. C. Calkins, Fairchild	Scotts Creek	12,000
Andrew Stinsaas, Eau Claire	Clear Creek	6,000
Martin Stang, Eau Claire	Rock Creek	6,000
W. L. Gile, Eau Claire	Elk Creek	6,000
Jas. A. Colville, Eau Claire	Otter Creek	6,000
Christ Volkman, Eau Claire	Otter Creek	6,000
J. Amundson, Eau Claire	Elk Creek	6,000
Danl. Brady, Eau Claire	Beaver Creek	9,000
A. A. Cutter, Eau Claire	Clear Creek	6,000
	Nine Mile Creek	6,000
	Elk Creek	3,000
Marshall Cousins, Eau Claire	Otter Creek	9,000
FLORENCE COUNTY—		105,000
W. T. Rynder, Florence	Mue Creek	5,000
Omer Huff, Florence	Le Page's Creek	5,000
Peter McGovern, Florence	Spring Ck., near Florence ..	5,000
FOND DU LAC COUNTY—		15,000
H. P. Cody, Ripon	Clarks Ck.	2,500
E. F. Reichmott, Ripon.....	Silver Creek	2,500
L. E. Reed, Ripon	Roy Creek	2,500
E. J. Burnside, Ripon	White Creek	2,500
Andrew Hill, Ripon	White Creek	2,500
H. C. Eversz, Ripon	Snake Creek	2,500
David Thomas, Ripon	Bruce Creek	2,500
T. S. Chittenden, Ripon	Lunch Creek	2,500
W. T. Runnals, Ripon	Widdle Creek	2,500
H. J. Foulsmann, Ripon.....	Henderson Creek	2,500
Fred J. Bonnel, Fond du Lac	Pinch Brook	2,500
Henry S. Miller, Fond du Lac	Parsons and Camp Ground Creeks	5,000
J. C. Brewer, Fond du Lac	Camp Ground Creek	2,500
	Sheridan's Forest Ck.	2,500
J. R. Foster, Fond du Lac	Mellis Creek	2,500
D. W. McLain, Fond du Lac	Meakin Creek	2,500
J. J. Gromme, Fond du Lac	Schneider Creek	2,500
Ed. Fisher, Peebles	Spring Creek	2,500
John Kohler, Campbellsport	McCullough Ck.	2,500
		50,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
GRANT COUNTY—		
Dighton Walt, Muscoda	Mills Creek	2,500
F. F. Postle, Muscoda	Six-mile Branch	5,000
Wm. A. Jameson, Muscoda	West Fork, Blue River	5,000
Chas. McMillan, Boscobel	Stuttenberg Ck.	5,000
H. C. McWilliams, Boscobel	Millville Branch	5,000
William H. Pittman, Boscobel	Hamilton Branch	2,500
	Rogers Branch	2,500
J. Walker, Boscobel	Shaw Hollow Branch	2,500
	Cook Branch	2,500
T. R. Cheesebro, Muscoda	Sand Branch	5,000
C. W. Mauer, Stitzer	Beetham Springs	5,000
A. Schmitt, Lancaster	Pigeon Creek	5,000
Eugene Brownell, Ellenboro	McPherson Branch	5,000
W. D. Burr, Ellenboro	Williams Branch	5,000
J. A. McPherson, Ellenboro	Hoffner's Branch	5,000
S. E. Hassel, Lancaster	Chub Branch	5,000
H. A. Davis, Montfort	Blue River Springs	2,500
	Dark Hollow Springs	2,500
	Badger Creek	2,500
	Wingville Springs	2,500
GREEN COUNTY—		77,500
Wm. W. Lahr, Juda	Juda Spring Creek	5,000
Saml. Ball, Juda	(Name of stream not given)	5,000
GREEN LAKE COUNTY—		10,000
R. F. Hamilton, Princeton	Snake Creek	5,000
IOWA COUNTY—		
N. T. Martin, Mineral Point	Rock Branch	5,000
W. J. Penhallegon, Mineral Point ..	Dodges Creek	5,000
W. G. Hales, Mineral Point	Carpenters Branch	5,000
Fred C. Burgess, Waldwick	Cassaday Creek	2,500
	Burgess Creek	2,500
Henry Cramer, Jonesdale	Tobins Branch	5,000
Thomas Thomas, Dodgeville	Head of Pecatonica River...	5,000
F. W. Stratman, Dodgeville	Head of Pecatonica River...	5,000
H. R. Carter, Jonesdale	Jones Creek	5,000
S. W. Reese, Dodgeville	Harker Creek	2,500
	Gooley Creek	2,500
	Snead Creek	2,500
	Cooks Hollow Ck.	2,500
	Dodge Creek	5,000
		55,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
JACKSON COUNTY—		
R. K. Frost, Millston	South Branch, Robinson Ck.	2,500
	Pigeon Creek	2,500
F. Dudley, Alma Center	Stockwell Creek	5,000
J. R. Sechler & Sons, Sechlerville...	Tribs., Trempealeau River ..	7,500
E. A. Miller, Hixton	N. Brch., Trempealeau Ck. .	5,000
	S. Brch., Trempealeau Ck. .	5,000
	Tank Creek	2,500
B. E. Edwards, La Crosse	Pigeon Creek	5,000
John Specht, West Superior	Town Line Creek	2,500
H. J. Ormsby, Black River Falls ...	Trout Creek	2,500
	French Creek	2,500
	Fisher Creek	2,500
R. D. Squires, Black River Falls ...	Squaw Creek	2,500
	Allen Creek	2,500
	Snow Creek	2,500
F. M. Loomis, Merrillan	Judkins Creek	2,500
	Cisna Creek	2,500
H. C. Warren, Merrillan	Van Herset Creek	2,500
	Visno Creek	2,500
E. E. Moore, Merrillan	Clear and Prairie Cks.	5,000
		65,000
JEFFERSON COUNTY—		
C. A. Birney, Palmyra	Water Cress Creek	5,000
L. H. Washburne, Palmyra	Bradways Creek	2,500
E. R. Trippe, Palmyra	Big Spring Creek	2,500
		10,000
JUNEAU COUNTY—		
C. P. Babcock, Mauston	Brewers Creek	5,000
A. H. Fletcher, Mauston	Mile Creek	5,000
S. H. Reed, Necedah	Fairfield Creek	2,500
W. R. Atcherson, Friendship	Little Roch-a-cris Ck.	2,500
	Brigham Ck.	2,500
F. M. Reed, Necedah	North Creek	2,500
W. A. Reed, Necedah	Jackson Creek	2,500
Jas. M. Burch, Necedah	Chester Creek	2,500
B. Schwanberg, Necedah	Spring Creek	2,500
C. H. Maxson, Necedah	Wris Creek	2,500
C. E. Babcock, Necedah	Johnson's Creek	2,500
Jas. T. Campbell, Necedah	Big Roch-a-cris Creek	2,500
P. F. Rossman, Elroy	Telfer Creek	5,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
JUNEAU COUNTY—Con.		
Cecil J. Phillips, Camp Douglas	Fountain Creek	2,500
	Aldo Creek	2,500
	Allen Creek	5,000
L. Buffmire, Camp Douglas	Allen Creek	5,000
Rev. Jas. Nevin, Lyndon	Harvey and Bowman Cks....	5,000
F. E. Hurd, New Lisbon	Macomber Creek	5,000
	Houghton Creek	5,000
	Fountain Creek	5,000
		75,000
LA CROSSE COUNTY—		
W. J. Scott, Madison	McConnell Creek	5,000
	West Cooley Ck.....	5,000
	Harpers Creek	2,500
	Upper Flemming Ck.	2,500
Edward Pfapp, Burr Oak	Davis Creek	5,000
E. D. Stilson, Mindora	Bells Creek	5,000
Chas. Barber, Mindora	Halfway Creek.	2,500
	Sand Creek	2,500
Peter Herder, St. Joseph Ridge	Mormon Cooley Ck.....	5,000
Alex. Johnson, West Salem	Gills Cooley Creek	2,500
	Buckley Creek	2,500
	McEldowney Creek	2,500
	Larson Creek	2,500
James McCord, La Crosse	Krall Creek	5,000
A. Hirschhelmer, La Crosse	N. Branch of Coon Ck....	5,000
J. J. Hogan, La Crosse	Fishbak Creek	5,000
Benedict Ott, La Crosse	Sand Lake Cooley Ck.....	5,000
		65,000
LA FAYETTE COUNTY—		
Michael Derrick, Fayette	Gowan Branch	5,000
LANGLADE COUNTY—		
C. W. Maney, Elcho	Spring Brook	5,000
J. C. Hall, Antigo	Eau Claire River	5,000
Ed. Leary, Antigo	North Branch of Evergreen River	15,000
		25,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
LINCOLN COUNTY—		
Ole I. Berg, Tomahawk	Hay and Spring Creeks	5,000
Vernon Goodnow, Irma	Little Pine Creek	2,500
	Spring-water Creek	2,500
O. F. Headstream, Tomahawk.....	Clear Creek	5,000
W. H. Flett, Merrill	Copper River and Tribs....	10,000
	Prairie River and Tributaries	15,000
	Hay-meadow Creek	5,000
		45,000
MARATHON COUNTY—		
C. E. Guenther, Knowlton	Little Eau Claire Creek	2,500
	Little Sandy Creek	2,500
A. L. Kreutzer, Wausau	Plover River and Tribs. ...	10,000
Neal Brown, Wausau	Plover River and Tribs. ...	10,000
D. Winton, Wausau	Tributaries of Plover	5,000
C. E. Gilbert, Wausau	Plover River	5,000
C. Eby, Fenwood	Muskrat Creek	5,000
		40,000
MARINETTE COUNTY—		
D. F. Tyrell, Madison	Muscona Creek	5,000
	Tributary of Muscona Creek	2,500
Geo. W. Taylor, Marinette	Beaver Creek and Tributa- ries	12,500
W. A. Brown, Marinette	Thunder River and Tributa- ries.	17,500
		37,500
MARQUETTE COUNTY—		
R. M. Johnson, Neshkoro	White River below the Dam.	5,000
MONROE COUNTY—		
A. N. Maltby, Oakdale	Allen Creek	5,000
M. L. Hineman, Tomah	Council Creek	5,000
L. L. Gillette, Warrens	Brandy Creek	2,500
	Winon Creek	2,500
T. G. Warren, Warrens	Sand Creek	5,000
J. O. Warriner, Tomah	Tarr Creek	2,500
	Flora Creek	2,500
	Louis Creek	2,500
	Council Creek	2,500

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
MONROE COUNTY—Con.		
W. H. Schultz, Tomah	Indian Creek	2,500
	Deer Creek	2,500
Louis Schaller, Tomah	Silver Creek	2,500
	Mill Creek	2,500
Anton Nelson, Tunnel City	Branch of Tarr Creek	2,500
J. J. Menn, Norwalk	Spring Creek	2,500
	Moores Creek	2,500
Saml. Sloggy, Norwalk	Brush Creek	2,500
	Billings Creek	2,500
	Cook Creek	2,500
	Moore's Creek	2,500
Chas. Van Antwerp, Sparta	Walworth Creek	2,500
C. E. Simpson, Sparta	Ash Run	2,500
C. W. Hines, Sparta	Beaver Creek	5,000
J. A. Sholts, Sparta	Shattuck Creek	2,500
C. E. McMillan, Sparta	Big Creek	2,500
D. W. Cheeney, Sparta	La Crosse River	5,000
	Silver Creek	2,500
	Leon Creek	2,500
OCONTO COUNTY—		82,500
J. J. Hof, Sobleski	Little Suamico River	5,000
J. E. Drendel, Lakewood	N. Brch., Oconto River	5,000
Chas. Hall, Oconto	Huns Creek	5,000
	W. Brch., Oconto River	5,000
H. M. Baldwin, Mountain	N. Brch., Oconto River	5,000
ONEIDA COUNTY—		25,000
John Davelin, Pratt Junction	Peattie Creek	5,000
PEPIN COUNTY—		
Hiram Fuller, Arkansaw	Bogus Creek	2,500
	Roaring Creek	2,500
August Thies, Pepin	Elk Creek	5,000
Guy S. Peck, Durand	Bear Creek	3,000
	Fall Creek	3,000
F. H. Boehrer, Durand	Averil and Arlady Cks.	6,000
W. B. Smith, Durand	Maple Springs	3,000
	Big Missouri Ck.	3,000
A. C. Huleatt, Arkansaw	Big and Little Arkansaw Creeks.	6,000
W. H. Huntington, Durand	Porcupine Creek	6,000
		40,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
PIERCE COUNTY—		
W. H. Neckerman, Rock Elm.....	Plum Creek	2,500
Jos. Crain, Farm Hill	Big Missouri Creek	2,500
Frank Horn, Rock Elm	Cave Creek	2,500
Julius Melcher, Rock Elm	Little Missouri Creek	2,500
W. C. Condit, Rock Elm	Big Missouri Creek	2,500
J. W. Losey, La Crosse	Rush River	10,000
C. W. Bateman, Ellsworth	Cave Creek	3,000
	Lost Creek	3,000
J. M. Curtiss, River Falls	South Fork Branch	6,000
F. M. White, River Falls	Tidds Creek	6,000
E. A. Tobey, River Falls	East Branch	6,000
C. R. Morse, River Falls	Kinnickinnick River	6,000
M. D. Burghardt, Spring Valley	Cliff Spring Creek	6,000
		58,500
POLK COUNTY—		
Geo. C. Glover, Amery	Spring Brook	3,000
John C. Sabin, Amery	Beaver Creek	3,000
John Howe, Amery	Wilson Creek	3,000
Severt Jacobson, Amery	Bull Creek	3,000
H. M. Webb, Amery	Spring Brook	6,000
		18,000
RICHLAND COUNTY—		
Aug. Scheele, Lone Rock	Tenant Creek	2,500
O. F. Taylor, Lone Rock	Meyers Creek	2,500
M. D. Elliot, Lone Rock	Marble Quarry Creek	2,500
C. S. Fuller, Lone Rock	Bear Creek	2,500
H. W. Haskell, Sr., Lone Rock	Four Spring Creek	2,500
A. J. Dickerson, Lone Rock	Carrol Creek	2,500
J. H. Sumner, Lone Rock	Doyle Creek	2,500
F. E. Lewis, Richland Center	Hawkins Creek	5,000
Jas. Nolan, Sextonville	Little Willow Creek	2,500
	Big Willow Creek	2,500
Chas. H. Kinzie, Richland Center ..	Fancy Creek	5,000
M. S. Bowler, Richland Center	Tributary of Willow Ck.	5,000
A. M. Rholik, Viola	Goose Creek	5,000
H. B. Allen, Richland Center	Jaquish Hollow Creek	5,000
		47,500

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
ROCK COUNTY—		
E. N. Haugen, Oxfordville	South Branch of Bass Ck....	5,000
W. H. Bunker, Clinton	Mill Creek	5,000
A. T. Fellows, Evansville	Liberty Creek	5,000
		15,000
ST. CROIX COUNTY—		
F. G. Green, Hudson	Willow River	6,000
E. A. Harding, Hudson	Willow River	6,000
S. C. Boardman, New Richmond....	Ten Mile Creek	6,000
P. B. Day, New Richmond	Willow River	3,000
P. E. DeMille, Baldwin	Timber Lake Springs	6,000
Hans Borchsenius, Baldwin	Wood Springs	6,000
S. S. Holmes, Baldwin.....	Rush River	6,000
		39,000
SAUK COUNTY—		
John F. Rosellip, Spring Green	Dodge Hollow Creek.....	5,000
Barney Pronold, Spring Green.....	Sugar Grove Creek	5,000
J. E. Morgan, Spring Green	Dodge Creek	5,000
W. E. Gosch, Reedsburg	Copper Creek	2,500
H. J. Finch, Reedsburg	Hay Creek	2,500
F. A. Foss, Reedsburg	Hay Creek	2,500
A. W. Benshausen, Reedsburg	Babbs Creek	2,500
F. D. Stewart, Reedsburg	Ely Creek	2,500
F. L. Mason, Oaks	Little Baraboo Creek	5,000
Frank Herfort, Baraboo	Leach Creek	5,000
Morris Hayes, Logansville	E. and W. Brancha., Seeley Creek	5,000
E. G. Mariott, Baraboo	Beach Creek	2,500
	Prentice Creek	2,500
		47,500
SHAWANO COUNTY—		
E. Steubenvoll, Pella	Malitz Spring Creek	5,000
R. B. Gaubitz, Wittenberg	Embarrass River	5,000
W. A. Gralapp, Wittenberg	Tributary, S. Brch. of Oconto River	5,000
B. H. Garfield, Shawano	Evergreen River	5,000
Solomon Stevens, Shawano	Butternut Lake	5,000
A. C. Weber, Shawano	Shiocton Creek	5,000
Fred Boenig, Shawano	Mill Creek	5,000
F. W. Humphrey, Shawano	Tributary of Red River	5,000
	Rose Creek	5,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
SHAWANO COUNTY—Con.		
H. R. Fuller, Eland	Eland Creek	5,000
W. J. Hagen, Eland	Tributary, W. Branch of Embarrass River	5,000
G. Natzke, Bonduel	Shiocton Creek	5,000
Hugh R. Edwards, Whitcomb	Whitcomb Ck.	5,000
		65,000
SHEBOYGAN COUNTY—		
E. Underhill, Winooski	Tributary of Milwaukee River.	5,000
Carl Hanneman, Plymouth	Mullet River	5,000
T. C. Sharpe, Elkhart Lake	Mullet River	10,000
		20,000
TREMPEALEAU COUNTY—		
Thomas Jackson, Independence	Plum Creek	2,500
T. E. Shappee, Independence	Travis Creek	2,500
	Chimney Rock Creek	2,500
Chas. B. Miller, Arcadia	American Valley Ck.	5,000
L. L. Sotsrud, Whitehall	Fly Creek	5,000
Thomas Barry, Arcadia	Newcombe Valley Ck.	5,000
H. H. Lewis, Hale	East Branch, Elk Creek	5,000
F. G. Davis, Galesville	Beaver Creek	2,500
	Tamarack Creek	2,500
	Maars Creek	2,500
	Strong's Creek	2,500
N. I. Gilbert, Eleva	West Big Creek	2,500
	Trout Creek.	2,500
		42,500
VERNON COUNTY—		
Donaldson Bros., West Lima	Head-waters South Bear Creek	10,000
Amund Peterson, Purdy	Trout Creek	5,000
C. T. Shannon, Westby	Spring Creek	5,000
Chas. B. Dake, Newton	North Badaxe	5,000
Lars Tömtin, Westby	Peterson Creek	5,000
Saml. Brown, Bloomingdale	Brown Branch	5,000
John Waddell, Otter Vale	Otter Creek	5,000
P. Skaal and Westby	West Bloomingdale Creek..	7,500
		47,500
Vilas County—		
O. W. Sayner, Minocqua	Tributary of Rice Lake	5,000
J. J. McDonald, Sayner	Hay-marsh Brook	2,500

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
VILAS COUNTY—Con.		
A. J. Harding, Sayner	Spring Brook	2,500
D. H. Sargent, Conover	Muskrat Creek	2,500
	Seven Mile Creek	2,500
B. F. Wilson, Star Lake	Langill Creek	5,000
H. E. Salsich, Star Lake	Main Tamarack Ck.	2,500
	Little Tamarack Ck.	2,500
D. B. Harvison, Star Lake	Nixon Brook	2,500
J. W. Landt, Star Lake	Star Creek	2,500
Alex. Blue, Star Lake	Lost Creek	2,500
P. C. Hart, Star Lake	McInnis Creek	7,500
WALWORTH COUNTY—		40,000
Ed. Hahn, Whitewater	Gleason Creek	2,500
Chas. S. Weeks, Whitewater	Andover Creek	2,500
	Faistels Creek	2,500
Ed. Engleretsen, Whitewater	Willson Creek	2,500
Chas. Pink, Whitewater	Antwiler Creek	2,500
H. L. Halverson, Whitewater	Hanson Creek	2,500
G. W. Sperbeck, Whitewater	Bluff Springs	2,500
	Galloway Creek	2,500
Barker Bros., Darlen	Cole Creek	5,000
O. F. Winnal East Troy	Odel Springs	5,000
O. B. Rodgers, East Troy	Troy Spring Brook	5,000
J. A. Collin, Delavan	Spring Brook	5,000
F. E. Burrows, Delavan	Spring Brook	2,500
WASHBURN COUNTY—		42,500
W. C. Crocker, Spooner	Potato Creek	6,000
Frank G. Scribner, Spooner	Bull Brook	3,000
J. W. Harmon, Spooner	Spring Creek	3,000
L. H. Meade, Shell Lake	Montgomery Creek	3,000
	Sawyer Creek	3,000
Andrew Ryan, Shell Lake	Sawyer Creek	3,000
	Dahlstrom Creek	6,000
W. B. Curtiss, Shell Lake	North Branch of Clam Creek	3,000
		30,000
WASHINGTON COUNTY—		
John Fries, Richfield	Head of Oconomowoc River.	5,000
Andrew Lehner, Ackerville	Outlet of Lehner's Lake	5,000
Henry Menger, Wayne	Tributary of Rock River ...	5,000
		15,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WAUKESHA COUNTY—		
B. J. Howard, Genesee	Sayles Creek	5,000
John W. Norton, Eagle	LeFevre Creek	5,000
John Schneider, Eagle	Schneider Creek	5,000
W. E. Stoppenbach, Eagle	Longs Creek	5,000
		20,000
WAUPACA COUNTY—		
F. M. Guernsey, Clintonville	Honey Creek	2,500
G. H. Guernsey, Clintonville	Vandarwaka Creek	2,500
Jos. Bentz, Clintonville	Spring Brook	2,500
J. H. Reinhold, Iola	Tributary of Black Brook ..	5,000
T. C. Thompson, Iola	Jackson Creek	5,000
M. S. Stroud, Symco	Shaw Creek	2,500
	Lovell Creek	2,500
T. E. Loope, Iola	Ogdensburg Creek	5,000
C. H. Anderson, Scandinavia	Tributary of S. W. Brch., Lit- tle Wolf River	5,000
		32,500
WAUSHARA COUNTY—		
Frank S. Gaylord, Berlin	Ripple Creek	5,000
Ed. Terrill, Rodney	Sucker Creek	2,500
Maurice Morarity, Rodney	Maars Creek	2,500
		10,000
WOOD COUNTY—		
L. L. Doud, Pittsville	Rocky Run	2,500
	Otter Creek	2,500
L. M. Nash, Centralia	Chester Creek	5,000
A. M. Muir, Grand Rapids	Four-mile Creek	5,000
Geo. M. Huntington, Grand Rapids ..	Mosquito Creek	2,500
	Railroad Creek	2,500
		20,000
Total distribution, 1899		2,093,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1899.

Name and Address of Applicant.	Where Planted.	No. of Fish.
ASHLAND COUNTY—		
Geo. P. Rossman, Ashland	Brunsweller Creek	10,000
R. G. Boetcher, Butternut	Stony Creek	2,500
	Hay Creek	2,500
C. F. Graf, Butternut	Rapid Creek	2,500
	Deer Creek	2,500
BARRON COUNTY—		20,000
T. W. Borum, Barron	Four Mile Creek	5,000
D. D. Page, Barron	Englert Creek	5,000
F. C. Wickenberg, Turtle Lake	Turtle Creek	5,000
BAYFIELD COUNTY—		15,000
Frank Hammill, Cable	Bass Lake	37,500
H. H. Augusta, Iron River	Iron River	32,000
Ernest Horner, Hornersville	Muskeg Creek	24,000
CHIPPEWA COUNTY—		93,500
E. A. Martin, Cadott	Paint Creek	5,000
Wm. F. Gilbert, Cadott	Clear Creek	5,000
S. R. Kaiser, Cadott	Brush Creek	5,000
C. L. Christianson, Bloomer	Duncan Creek	5,000
Conrad Trankle, Bloomer	Cissman Creek	5,000
John Ure, Jr., Badger Mills	Small Brooks near Badger Mills, Wis.	5,000
Geo. B. Early, Chippewa Falls	McCann Creek	5,000
CLARK COUNTY—		35,000
Chas. Servaty, Neillsville	Wedges Creek	2,500
	Pony Creek	2,500
COLUMBIA COUNTY—		5,000
W. G. Bissell, Lodi	Spring Creek and other creeks near Lodi, Wis. ...	10,000
CRAWFORD COUNTY—		
J. O. Davidson, Soldiers Grove	Kickapoo River	12,500
DOUGLAS COUNTY—		
Fred Beglinger, West Superior	Clear Lake	5,000
Henry Beglinger, Superior	Bennett Lake	5,000
Jos. Lucins, Winneboujou	Brule River	25,000
C. T. Campbell, Brule	Brule River	32,000
		67,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
EAU CLAIRE COUNTY—		
B. S. Phillips, Eau Claire	Robinson Creek	5,000
A. A. Cutter, Eau Claire	Nine Mile Creek	5,000
		10,000
FOREST COUNTY—		
John Kiernan, Armstrong Creek ...	Armstrong Creek	10,000
LANGLADE COUNTY—		
Martin Elben, Phlox :.....	Tributary of Silver Ck.	5,000
Ed. Leary, Antigo	South Branch of Evergreen River	20,000
		25,000
LINCOLN COUNTY—		
O. F. Herdstream, Tomahawk.....	Clear Creek	10,000
MARATHON COUNTY—		
Michael Nowicki, Poniatowski	Little Eau Pleine River	5,000
Robt. Schwaeger, Poniatowski	Black Creek	5,000
John Suebert, Marathon	Rib River	5,000
		15,000
MARINETTE COUNTY—		
J. E. Laricheliere, Crivitz	Thunder River	10,000
H. H. Bartels, Crivitz	Brandywine Creek	10,000
D. F. Tyrrell, Madison	Pemerle Creek	5,000
	Little Musacona Creek	5,000
Geo. W. Taylor, Marinette	Various streams in Marinette County	35,000
W. A. Brown, Marinette	Streams in Marinette Co....	10,000
J. B. Wood, Amberg	Streams in the vicinity of Amberg, Wis.	25,000
		100,000
MARQUETTE COUNTY—		
Rudolph Meinke, Westfield	Montello River	7,500
W. H. Pier, Stevens Point	Chaffee Creek	5,000
L. W. Hettinger, Westfield	Fountain Creek	5,000
W. H. Moss, Westfield	Peat Creek	5,000
Albert Rosenbaum, Westfield	Schatzke Creek	2,500
		25,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
OCONTO COUNTY—		
Chas. Hall, Oconto	North Branch of Oconto River	50,000
ONEIDA COUNTY—		
John Davellin, Pratt Junction	Wolf River	5,000
Peter Jones, Tomahawk Lake	Blue Creek	32,000
	Clear Creek	24,000
	Spring Creek	24,000
		85,000
OUTAGAMIE COUNTY—		
H. L. Daggett, Welcome	Bear Creek	5,000
	Deer Creek	5,000
		10,000
PIERCE COUNTY—		
J. W. Losey, La Crosse	Rush River	25,000
Wm. H. Short, Spring Valley	French Creek and other streams tributary to Eau Galle and Rush Rivers...	25,000
		50,000
POLK COUNTY—		
John Howe, Amery	Sucker Creek	2,500
	Beaver Creek	2,500
		5,000
PORTAGE COUNTY—		
A. J. Anderson, Amherst	To-morrow River	5,000
H. E. Loberg, Amherst	Tributary, Rolefson Lake...	5,000
John Een, Amherst	Een's Creek	5,000
		15,000
PRICE COUNTY—		
Hugh Boyd, Fifield	Price Creek	5,000
W. P. Sperry, Phillips	Dantis Lake	5,000
Tony Andrae, Phillips	Dantis Lake	5,000
Rowland Williams, Phillips	Little Dantis Lake	5,000
Darwin Sperry, Phillips	Dantis Lake	5,000
	Little Dantis Lake	5,000
		30,000
ST. CROIX COUNTY—		
B. Dean, Jewett	Pine Springs	5,000
A. J. Flemmington, Glenwood	Hay River	5,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
ST. CROIX COUNTY—Con.		
M. R. Stevens, Jewett Mills	Stevens Springs	5,000
J. E. Jones, Hudson	Willow River	5,000
E. A. Harding, Hudson	Willow River	5,000
S. W. Bandy, Hudson	Willow River	5,000
L. G. Green, Hudson	Willow River	5,000
		35,000
SAWYER COUNTY—		
H. B. Shue, Hayward	Nemacogin River	25,000
SHAWANO COUNTY—		
Wm. G. Heins, Wittenberg	Middle Brch., Embarrass River	10,000
W. A. Gralapp, Wittenberg	Tribs., South Brch., Embarrass River	5,000
:		15,000
TAYLOR COUNTY—		
F. M. Perkins, Medford	Tributary of Rib River	5,000
F. N. Cleveland, Medford	Mink Creek	5,000
Geo. N. Kehrhofer, Chelsea	Tributary of Rib River	5,000
		15,000
VERNON COUNTY—		
Melvin P. Hague, Purdy	Bristow Creek	5,000
W. M. Kingston, Viroqua	Wing Creek	5,000
O. G. Munson, Viroqua	Bishop Branch	10,000
		20,000
VILAS COUNTY—		
Alex. D. White, Chicago, Ill.	Head of Deer-skin Riv.	7,500
Fred Morey, Eagle River	Deer Skin River	10,000
A. McKenzie, Eagle River	Deer Skin River	10,000
A. A. Babcock, Appleton	Head-waters of Bruel River ..	10,000
Jas. Carlin, State Line	Lake near State Line, Wis..	40,000
		77,500
WASHBURN COUNTY—		
Wm. Busch, Spooner	Mud Lake	30,000
	Spring Brook	20,000
		50,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WAUPACA COUNTY—		
A. P. Andrews, Sheridan	Harres Creek	2,500
Fred Johnson, Sheridan	Waupaca Creek	2,500
H. Olsson, Sheridan	Waupaca River	2,500
Edward E. Browne, Waupaca	Emmons Creek	2,500
	Radley Creek	2,500
	Pest House Creek	2,500
W. B. Baker, Waupaca	Emmons Creek	5,000
	Radley Creek	2,500
Geo. N. Jeffers, Sheridan	Steadman Creek	2,500
Henry Jeffers, Sheridan	Howard Creek	2,500
W. T. Damke, Tilleda	North Branch of Embarass River	7,500
Aug. Ahlyrinson, Pella	Embarass River	7,500
Arthur Lindsay, Manawa	Ogdensburg Creek	10,000
Geo. Dale, Iola	Head of Waupaca River ...	10,000
		62,500
WAUSHARA COUNTY—		
A. Preno, Coloma Station	Berr. Creek	2,500
Howard Preno, Coloma Station ...	Mecan River	2,500
F. M. Smith, Coloma Station	Head of Mecan River	5,000
S. H. Runnals, Coloma Station	Big Spring Creek	2,500
Thos. Fearn, Coloma Station	Mecan River	10,000
L. W. Beach, Hancock	Little Roch-a-cris Creek	5,000
W. H. Campfield, Hancock	Blg Roch-a-cris Creek	5,000
		32,500
WOOD COUNTY—		
Fred Bauer, Marshfield	Uthmeir Creek	5,000
E. C. Post, Marshfield	Foesstenberg's Ck	5,000
W. W. Meade, Centralia	Four Mile Creek	5,000
Ben Hanson, Centralia	Mosquito Creek	5,000
H. C. Timm, Centralia	Tributary of Four Mile Creek	5,000
T. J. Cooper, Centralia	Moccasin Creek	5,000
Jos. Bogoger, Centralia	Moccasin Creek	5,000
Geo. M. Huntington, Grand Rapids .	Fourteen Mile Creek	2,500
	Five Mile Creek	2,500
		40,000
Total distribution, 1899.....		1,070,500

Distribution of Fish.

WALL-EYED PIKE FRY PLANTED, 1899.

Name and Address of Applicant.	Where Planted.	No. of Fish.
BARRON COUNTY—		
Wm. Robinson, Cumberland	Silver Lake	200,000
E. A. Palmer, Turtle Lake	Horse-shoe Lake	240,000
Albert Rosenbush, Turtle Lake	Apple River	120,000
	Little Round Lake	120,000
F. C. Wickenburg, Turtle Lake	Bear Lake.....	240,000
P. M. Parker, Rice Lake	Guider Lake	440,000
D. D. Page, Barron	Poskin Lake	400,000
		1,760,000
BAYFIELD COUNTY—		
Frank Hammill, Cable	Bass Lake	800,000
J. A. Pettingill, Iron River	Roberson Lake	200,000
H. C. Hall, Iron River	Spider Lake	200,000
John Brady, Iron River	Iron Lake	200,000
Ernest Suave, Iron River	Crystal Lake	200,000
L. H. Lien, Mason	White River	240,000
Saml. Bower, Birch Lake	Clear Lake	400,000
		2,240,000
CHIPPEWA COUNTY—		
E. X. Adams, Boyd	Pike Lake	140,000
W. J. Ickstedt, Boyd	Pike Lake	140,000
Jas. T. Joyce, Eau Claire	Chain of Lakes	400,000
A. J. McGilvary, Chippewa Falls ...	Sand Lake	240,000
A. E. Walrath, Chippewa Falls	Salesbury Lake	240,000
P. S. Peterson, Bloomer	Duncan Creek Ponds ...	320,000
Elijah Swift, Eau Claire	Chain o'Lakes	400,000
C. A. Stanley, Chippewa Falls	Popple Lake	320,000
John Ure, Jr., Badger Mills	Lake Hallie	320,000
Jas. T. Joyce, Eau Claire	Chain o'Lakes	400,000
		2,920,000
CLARK COUNTY—		
Henry B. Eder, Colby	South Fork of Popple River	140,000
Geo. L. Jaques, Neillsville	Black River	200,000
W. L. Morrison, Neillsville	Neillsville Pond	200,000
		540,000
COLUMBIA COUNTY—		
J. A. Collin, Lodi	Fish Lake	280,000
W. G. Bissell, Lodi	Fish Lake	280,000
		560,000

Distribution of Fish.

WALL-EYED PIKE FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
CRAWFORD COUNTY—		
J. O. Davidson, Madison	Mill Pond on Kickapoo R.	280,000
W. S. Manning, Soldiers Grove	Kickapoo River Mill Pond	140,000
		420,000
DANE COUNTY—		
W. J. Nevin, Madison	Planted in Lake Mendota.	910,000
	Planted in Lake Monona .	700,000
C. R. Schepley, Stoughton	Lake Kegonsa	280,000
Frank Suthers, Madison	Lake Monona	1,200,000
	Lake Mendota	1,640,000
		4,730,000
DODGE COUNTY—		
C. F. Wege, Hustisford	Rock River	280,000
Theo. P. Hemmy, Juneau	Rock River	630,000
		910,000
DOOR COUNTY—		
Henry Overbeck, Jr., Sturgeon Bay.	Sturgeon Bay	700,000
DOUGLAS COUNTY—		
N. Lucins, Jr., Solon Springs	Upper St. Croix Lake	400,000
DUNN COUNTY—		
Chas. Piers, Menomonie	A Lareg Pond (no name).	200,000
EAU CLAIRE COUNTY—		
W. L. Botsford, Altoona	Eau Claire River	200,000
Chas. Stiding, Altoona	Five Mile Lake	200,000
Frank Stevens, Augusta	Two Mill Ponds	200,000
		600,000
FLORENCE COUNTY—		
H. D. Fisher, Florence	Fisher Lake	560,000
	Keyes Lake	560,000
Omer Huff, Florence	Two small spring lakes ..	280,000
		1,400,000
GRANT COUNTY—		
J. P. Esch, Muscoda	Brunners Lake	140,000
Thomas McDonald, Lancaster	Little Platte River	140,000
	Grant River	140,000
		420,000

Distribution of Fish.

WALL-EYED PIKE FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
GREEN COUNTY—		
H. C. Putnam, Brodhead	Sugar River	420,000
GREEN LAKE COUNTY—		
C. P. Hazletine, Dartford	Green Lake	700,000
IOWA COUNTY—		
Wm. C. Neffert, Arena	Rockwell Slough	140,000
IRON COUNTY—		
Geo. H. Foster, Hurley	Lake tributary, Manito- wish River	480,000
JACKSON COUNTY—		
W. G. Stoltz, Taylor	Mill Pond on Trempealeau River	140,000
A. C. Anderson, Taylor	Trempealeau River	140,000
R. D. Squires, Black River Falls....	Squaw River	200,000
F. W. Cole, Black River Falls.....	Black River	200,000
		680,000
JEFFERSON COUNTY—		
H. J. Grell, Johnsons Creek	Rock River	140,000
H. Grube, Watertown	Rock River	140,000
John Kessler, Watertown	Rock River above the Dam	140,000
Orin Cramer, Lake Mills	Rock Lake	700,000
H. C. Christians, Johnsons Creek ..	Rock River	140,000
John Lindeman, Ixonia	Rock River	280,000
John Grimms, Jefferson	Rock River	70,000
		1,610,000
KENOSHA COUNTY—		
F. H. Schenning, Silver Lake	Silver Lake	700,000
Henry Benedict, Genoa Junction ...	Benedict Lake	350,000
	Browns Lake	350,000
		1,400,000
LANGLADE COUNTY—		
C. W. Manev, Elcho	Post Lake	280,000
Anton Follstad, Elcho	Otter Lake	280,000
		560,000

Distribution of Fish.

WALL-EYED PIKE FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
LINCOLN COUNTY—		
O. Londo, Tomahawk	Londo's Lake	140,000
H. A. Atcherson, Tomahawk	Forest City Lakes	140,000
O. F. Headstream, Tomahawk	Clear Lake	140,000
W. H. Flett, Merrill	Clear Lake	280,000
		700,000
MANITOWOC COUNTY—		
J. Koping, Steinthal	Cedar Mill Pond	140,000
MARATHON COUNTY—		
J. H. Blanchard, Colby	Eau Pleine River	140,000
MARQUETTE COUNTY—		
Elmore Robinson, Westfield	Mud Lake	140,000
Jacob Fenner, Westfield	Mill Pond at Westfield ...	140,000
		280,000
MILWAUKEE COUNTY—		
Cornellius, Wheeler, National Home.	Swan and Cemetery Lakes	350,000
MONROE COUNTY—		
F. K. Randall, Sparta	Perch Lake	280,000
Fred Gross, Sparta	La Crosse River	280,000
		560,000
OZAUKEE COUNTY—		
A. R. Boermer, Cedarburg	Cedar Creek Mill Pond ..	140,000
F. G. Schuette, Cedarburg	Cedarburg Mill Pond	140,000
		280,000
PEPIN COUNTY—		
A. C. Huleatt, Arkansaw	Mill Pond on Lower Ark- ansaw Creek	240,000
POLK COUNTY—		
E. A. Scharin, Balsam Lake	Sand and Balsam Lakes ..	160,000
H. M. Webb, Amery	Sommerfield Lake	160,000
Wm. Stowell, St. Croix Falls,	Poplar Lake	160,000
J. N. Johnson, Osceola	Poplar and Sand Lakes ..	160,000
		640,000

Distribution of Fish.

WALL-EYED PIKE FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
PORTAGE COUNTY—		
O. J. Een, Amherst	Ebert Lake	280,000
Louis Zimmer, Stevens Point	Wis. River between Clark and Whitting's Dams	280,000
Frank Pickert, Stevens Point	Wisconsin River	280,000
Carl O. Dorrud, Nelsonville	Waupaca River	140,000
		980,000
PRICE COUNTY—		
Hugh Boyd, Ffield	Pelican Lake	140,000
RACINE COUNTY—		
Rev. T. Jacobs, Burlington	Brown's Lake	280,000
Barney Lavin, Kansasville	Eagle Lake	350,000
Y. P. Thompson, Racine	Root River	140,000
		770,000
ROCK COUNTY—		
Richard Valentine, Janesville	Rock River	280,000
ST. CROIX COUNTY—		
E. J. Dimmick, New Richmond	Pine Lake	200,000
Michael Steckmeyer, Roberts	Twin Lakes	200,000
Jas. Dunning, Burkhardt	Perch Lake	240,000
R. W. Hedback, Star Prairie	Lake Hedbacks	240,000
		880,000
SAUK COUNTY—		
W. J. Nevin, Madison	Devils Lake	700,000
SAWYER COUNTY—		
H. B. Shue, Hayward	Round Lake	400,000
	Spider Lake	400,000
	Long Lost Lake	400,000
Wm. Hogue, Hayward	Round Lake	400,000
H. N. Berry, Hayward	Stony Lake	400,000
		2,000,000
SHAWANO COUNTY—		
F. W. Humphrey, Shawano	Shawano Lake	1,400,000
F. R. Schneider, Regina	Lake Kolpack	280,000
M. E. Schneider, Wittenberg	Wilson's Lake	280,000
W. A. Gralapp, Wittenberg	Wilson's Lake	280,000
		2,240,000

Distribution of Fish.

WALL-EYED PIKE FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
SHEBOYGAN COUNTY—		
M. B. Heinen, Random Lake	Random Lake	140,000
	Lake Twelve	140,000
		280,000
TAYLOR COUNTY—		
Frank N. Cleveland, Medford	Nigger Lake	140,000
TREMPEALEAU COUNTY—		
T. E. Shappee, Independence	Independence Pond	140,000
VILAS COUNTY—		
Harvey Selleck, Minocqua	Minocqua Lake	350,000
Jacob Morey, Minocqua	Minocqua Lake	350,000
D. B. Kennedy, Minocqua	Tomahawk Lake	350,000
C. H. Leary, Minocqua	Tomahawk Lake	350,000
S. Johnson, Eagle River	Finger Lake	280,000
	Green Lake	280,000
	Lawler Lake	280,000
G. H. Kordenant, Minocqua	Kewaugesauger Lake	140,000
Salsich and Willson, Star Lake	Plum and Partridge Lakes	140,000
D. B. Harvison, Star Lake	Little Muskellunge Lake	70,000
Alex. Blue, Star Lake	Star Lake	140,000
J. J. McDonald, Sayner	Plum Lake	140,000
A. J. Harding, Sayner	Plum Lake	140,000
Jas. Nevin, Madison	Planted in Pine Lake	700,000
Jas. Carlin, Ashland	Lake near State Line	400,000
W. H. Cannon, Madison	Clear Lake	700,000
		4,800,000
WALWORTH COUNTY—		
John Porter, Lake Beulah	Lake Beulah	420,000
W. A. West, Elkhorn	Lauderdale Lakes	700,000
Sage and Co., Delavan	Delavan Lake	700,000
		1,820,000
WASHBURN COUNTY—		
Andrew Ryan, Shell Lake	Little Long Lake	400,000
WASHINGTON COUNTY—		
K. E. Clough, Richfield	Frieses Lake	280,000
M. Wilson, Hartford	Pike Lake	280,000
Fred Wolfrum, West Bend	Little Cedar Lake	280,000
P. W. Harns, West Bend	Little Cedar Lake	280,000

Distribution of Fish.

WALL-EYED PIKE FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WASHINGTON COUNTY—Con.		
W. E. Wolfrum, West Bend.....	Little Cedar Lake	280,000
Chas. Suckow, Barton	Milwaukee River	280,000
John Rosenheimer, Schleisingserville	Big Cedar Lake	350,000
	Little Cedar Lake	350,000
WAUKESHA COUNTY—		2,380,000
Brad. Young, Oconomowoc	LaBelle Lake	700,000
	Oconomowoc Lake	350,000
	Nemahbin Lake	350,000
J. McRandles, Waukesha	Pewaukee Lake	420,000
B. Vanderpool, Delafield	Nagawicka Lake	280,000
Louis Kuntz, Delafield	Nagawicka Lake	280,000
C. W. Fraser, Menomonie Falls ...	Lake Five	280,000
		2,660,000
WAUPACA COUNTY—		
Edward E. Browne, Waupaca	Startton Lake	70,000
	Pine Lake	70,000
	Clear Lake	70,000
	Mirror Lake	70,000
Enor Lynch, Crystal Lake	Twin Lake	70,000
	Crystal Lake	70,000
W. L. Wilson, Saxeville	Long Lake	140,000
A. C. McComb, Oshkosh	Clover Leaf Lakes	700,000
Chas. B. Smith, Embarass	Embarass River	280,000
Arthur Lindsay, Manawa	Little Wolf River	140,000
A. Weinmann, Jr., Iola	Little Wolf River above Reamer's Dam	140,000
S. C. Nessling, Waupaca	Chain o'Lakes	1,400,000
		3,220,000
WAUSHARA COUNTY—		
D. W. Jones, Wild Rose	Gilbert Lake	140,000
S. Van Rosen, Wild Rose	Round Lake	140,000
C. A. Smart, Wild Rose	Coosel Lake	140,000
F. M. Clark, Wild Rose	Silver Lake	140,000
		560,000
WINNEBAGO COUNTY—		
John Maag, Oshkosh	Planted in Lake Win- nebago	7,000,000
WOOD COUNTY—		
Geo. B. McMillan, Centuria	Wisconsin River	140,000
A. M. Muir, Centuria	Beron Mill Pond	140,000

Distribution of Fish.

WALLEYED PIKE FRY PLANTED, 1899—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WOOD COUNTY—Con.		
H. H. Voss, Grand Rapids	Hursley Mill Pond	140,000
J. E. Brazeau, Grand Rapids	Wisconsin River	140,000
Geo. M. Huntington, Grand Rapids .	Wisconsin River	140,000
H. C. Timm, Grand Rapids	Mill Pond on Wis. River..	140,000
		840,000
Total distribution, 1899.....	.. .....	60,190,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1900.

Name and Address of Applicant.	Where Planted.	No. of Fish.
ASHLAND COUNTY—		
M. J. Hayden, Ashland	Trib., White River.....	10,000
Hugo Schmidt, Glidden	E. Fork of Chippewa River	5,000
Louis A. Maier, Mellen	Devils Creek	5,000
H. L. Drake, Mellen	Saw Mill Creek	2,500
	Drake Creek	2,500
Theo. R. Yankee, Ashland	Spille Creek	5,000
W. G. Nohl, Ashland	Trout Creek	5,000
Geo. Sell, Glidden	Magee Creek	5,000
John J. Hayden, Butternut	Brunnie Creek	5,000
		45,000
BARRON COUNTY—		
J. E. Horsman, Rice Lake	Silver Creek	2,500
M. P. Barry, Rice Lake	Brown's Creek	2,500
Geo. Anderson, Rice Lake	Silver Creek	2,500
E. K. Brayton, Rice Lake	Silver Creek	2,500
D. W. McClench, Rice Lake	Tuscobia Creek	2,500
N. W. Heintz, Rice Lake	Cobb Creek	2,500
C. H. Cleveland, Rice Lake	Silver Creek	2,500
C. A. Stark, Rice Lake	Hickey Creek	2,500
Chas. T. Nunn, Rice Lake	Singles Creek	2,500
Harry Halverson, Dallas	South Sioux Creek	2,500
Seaver Seaverson, Dallas	Spring Creek	2,500
D. A. Russell, Dallas	North Pine Creek	2,500
K. Espeseth, Dallas	South Pine Creek	2,500
Ole Hanson, Dallas	Doe Creek	2,500
DeWitt Post, Barron	Pine Creek	2,500
	Barkers Creek	2,500
D. D. Page, Barron	Brown's Creek	5,000
T. W. Borum, Barron	Four Mile Creek	2,500
	Johnson Creek	2,500
W. O. Hood, Barron	Four Mile Creek	5,000
F. F. Morgan, Cumberland	Anderson Spring Brook ..	5,000
	Miller Creek	5,000
		65,000
BAYFIELD COUNTY—		
G. W. Taylor, Ashland Junction	Fish and Pine Creeks	5,000
C. Livingston, Cable	Nelson Creek	5,000
Bert Robinson, Washburn	Sioux River	2,500
	Four Mile Creek	2,500

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
BAYFIELD COUNTY—Con.		
J. L. Sayles, Pratt	Eighteen Mile Creek	2,500
	Twenty Mile Creek	2,500
	Long Lake Branch	2,500
Estabrook and Olson Fur Co., Wash- burn	Long Lake Branch	5,000
	Sweeden Creek	5,000
O. C. Williams, Iron River	Iron River	10,000
John Brady, Iron River	Head-waters, Iron River ..	10,000
F. Hammill, Cable	Nemacogin River	5,000
		57,500
BUFFALO COUNTY—		
Henry Roettiger, Fountain City	Right and Left Brchs., Eagle Creek	6,000
	British Valley Creek	3,000
	Hevers Creek	3,000
L. P. Hunner, Alma	Spring Creek	6,000
	Bates Creek	3,000
	Trout Creek	3,000
	Waumandee Creek	3,000
D. J. McKenzie, Alma	Waumandee Creek	3,000
	Mill Creek	3,000
	Lincoln Creek	3,000
	Spring Creek	3,000
	Trout Creek	3,000
C. S. Kenyon, Gilmanton	Turner Valley Creek	6,000
	Hedley Creek	6,000
	Elk Creek	3,000
J. W. Whelan, Mondovi	Hay Creek	3,000
John D. Pace, Mondovi	Fifteen Mile Creek	3,000
John Maloney, Mondovi	Armour Creek	3,000
Thomas Ward, Mondovi	Ford Creek	3,000
Carl Holmes, Mondovi	Mill Creek	3,000
J. M. Pratt, Gilmanton	Pratts Creek	3,000
	Elk Creek	3,000
	Gilman Valley Creek	3,000
		81,000
CALUMET COUNTY—		
M. V. McMullen, Brillion	Spring Creek	6,000
CHIPPEWA COUNTY—		
F. W. Hanzlik, Chippewa Falls ...	Hay Creek	5,000
P. H. Lindley, Chippewa Falls	Trout Creek	10,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
CHIPPEWA COUNTY—Con.		
E. H. Rodgers, Bloomer	Conroy Creek	2,500
	Cusman Creek	2,500
	O'Neill Creek	2,500
E. E. Gilman, Drywood	Russel Creek	5,000
S. A. Loper, Stanley	Tributary of Eau Claire River	5,000
Louis Mittermeyer, Boyd	Shilts Creek	5,000
L. G. Chasman, Stanley	Otter Creek	5,000
E. A. Martin, Cadott	Spring Brook	7,500
H. S. Adams, Boyd	Hay Creek	5,000
S. R. Kafsner, Cadott	Brush Creek	2,500
Wm. Gilbert, Cadott	Clear Creek	2,500
		60,000
CLARK COUNTY—		
Chas. Servaty, Neillsville	Poney Creek	6,000
Herman Banderob, Thorpe	Banderob Creek	5,000
John Moore, Thorpe	Moore and Foley Creeks ..	5,000
John G. Owen, Owen	Britt Creek	5,000
		21,000
COLUMBIA COUNTY—		
F. H. Smith, Pardeeville	Tributaries of Fox River ..	6,000
R. W. Drinker, Kilbourn City	Barrets Creek	3,000
	Fitzgerald's Creek	3,000
Guy C. Pierce, Kilbourn City	Twin Valley Creeks	6,000
J. M. Powers, Prairie du Sac	Spring Creek	6,000
W. G. Bissell, Lodi	Spring Creek	6,000
		30,000
CRAWFORD COUNTY—		
J. O. Davidson, Madison	Johnson Creek	3,000
	Bear Creek	3,000
Tim Garrity, Soldiers Grove	Johnson and Bear Creek ..	6,000
	Knapp Creek	6,000
Atley Peterson, Soldiers Grove	Soldiers Grove Creek	6,000
	Trout Creek	6,000
		30,000
DANE COUNTY—		
A. Stout, Albion	Albion Creek	6,000
Ernest Knudson, Mount Vernon	West Branch of Sugar R. ..	6,000
John Vilberg, Mt. Horeb	Elvers Mill Creek	3,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
DANE COUNTY—Con.		
S. A. Britton, Mt. Horeb	Erbe Creek	3,000
P. A. Sletto, Mt. Horeb	Noon Creek	3,000
N. C. Evans, Mt. Horeb	Amberger's Creek	3,000
		24,000
DOUGLAS COUNTY—		
N. Lucins, Jr., Solon Springs	Brule River	7,500
	Ox Creek	5,000
Nick Anderson, Lake Nebagamon ..	Poplar River	5,000
	Blue-berry Creek	5,000
	Johnson Creek	2,500
J. A. Sidney, Poplar	Poplar River	5,000
		30,000
DUNN COUNTY—		
Gus Hellum, Menomonie	Brush Creek	3,000
John Steele, Menomonie	Gilbert Creek	3,000
M. A. Hanson, Menomonie	Elk Creek	3,000
Chris. Pauly, Menomonie	Irvine Creek	3,000
Victor Desimral, Menomonie	Annis Creek	3,000
L. Ingraham, Menomonie	Half Creek	6,000
Clifford Catt, Red Cedar	Fall Creek	5,000
O. J. Olson, Colfax	Larson Creek	5,000
F. J. Basner, Wheeler	Beaver Creek	5,000
F. Suthers, Madison	Trout Creek (near Colfax, Wis.)	7,500
John J. Olsen, Colfax	Eighteen-mile Creek	2,500
Hans M. Olsen, Colfax	Olsen Creek	2,500
Jens J. Olsen, Colfax	North Branch of Eighteen-mile Creek	2,500
Frank J. Hones, Colfax	Eighteen-mile Creek	2,500
I. Sprague, Prairie Farm	Dahuly Creek	2,500
A. G. Butterfield, Tonnar	Vance Creek	2,500
	Hay Creek	2,500
	Little Pine Creek	2,500
		63,500
EAU CLAIRE COUNTY—		
B. A. Burlington, Eau Claire	Five Mile Creek	2,500
	Coon Creek	2,500
	Clear Creek	2,500
	Seven Mile Creek	2,500
B. S. Phillips, Eau Claire	Ten Mile Creek	2,500
	Trout Creek	2,500

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
EAU CLAIRE COUNTY—Con.		
Marshall Cousins, Eau Claire	Eighteen Mile Creek	2,500
	Rock Creek	2,500
W. J. Rolland, Eau Claire	Nine Mile Creek	5,000
W. L. Botsford, Altoona	Six Mile Creek	2,500
	Nine Mile Creek	2,500
Frank Schule, Altoona	Nine Mile Creek	2,500
	Six Mile Creek	2,500
William Swanke, Fall Creek	Bear Grass Creek	2,500
G. E. Bartz, Fall Creek	Sand Creek	2,500
John Lehn, Fall Creek	Black Creek	2,500
		42,500
FOND DU LAC COUNTY—		
H. C. Eversz, Ripon	Henderson Creek	6,000
• W. T. Runnals, Ripon	Daking Creek	6,000
H. L. Barnes, Ripon	Silver Creek	3,000
L. E. Reed, Ripon	Roy Creek	3,000
E. J. Burnside, Ripon	Snake Creek	3,000
T. S. Chittenden, Ripon	Fairwater Creek	3,000
Ed. F. Reichmott, Ripon	Powls Creek	3,000
Chas. L. Handt, Fond du Lac	Eden Creek	3,000
Thomas A. Watson, Fond du Lac ..	Empire Creek	6,000
C. W. Keyes, Fond du Lac	Empire Creek	3,000
H. R. Potter, Fond du Lac	Empire Creek	6,000
Simon Schafer, Fond du Lac	Empire Creek	3,000
Henry S. Miller, Fond du Lac	Parson Creek	3,000
	Camp Ground Creek	3,000
Ed. Hayden, Byron	Tributary of Milwaukee River	6,000
Henry Rucks, Fond du Lac	Camp Ground Creek	6,000
		66,000
GRANT COUNTY—		
S. J. Hasler, Muscoda	Wall Branch	6,000
Ernest Heim, Muscoda	Waters Creek	6,000
F. Murley, Boscobel	Owens Creek	3,000
F. W. Schmitt, Boscobel	Dell Branch	3,000
J. E. Hughes, Boscobel	Sealey Creek	3,000
Chas. G. Kretch, Boscobel	Clear Creek	3,000
W. J. F. Nauert, Boscobel	Wall Branch	3,000
Wm. Wagner, Boscobel	Crooked Creek	3,000
Louis Kraut, North Andover	Miller Creek	3,000
John J. Ryan, North Andover	Muscallonge Creek	6,000
J. L. Morkin, North Andover	Heilerman Creek	3,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
GRANT COUNTY—Con.		
Reeves Ryan, North Andover	Rattle-snake Creek	3,000
J. T. Chapman, Platteville	Mound and Block House Creeks	6,000
Fritz Hoppe, Platteville	Block House Creek	6,000
John Kelley, Woodman	Big and Little Green Rivers	6,000
		63,000
GREEN COUNTY—		
P. H. White, Monroe	Honey Creek	6,000
GREEN LAKE COUNTY—		
T. W. Hamilton, Berlin	Herrington Creek	3,000
	Perses Creek	3,000
Geo. W. Morton, Berlin	Herrington Creek	6,000
Wm. Stewart, Berlin	Willow Creek	6,000
		18,000
IOWA COUNTY—		
S. W. Reese, Dodgeville	Head of Otter Creek	9,000
	Bloots Creek	6,000
M. C. McIntyre, Avoca	Swinehearts Creek	6,000
G. D. Masten, Mineral Point	Lynch Creek	3,000
Chas. Hornung, Mineral Point	Berg Creek	3,000
Wm. P. Bliss, Mineral Point	Motley Creek	3,000
Wm. P. Gundry, Mineral Point	Small Spring Creek	3,000
N. T. Martin, Mineral Point	Salmon Branch	3,000
W. G. Hales, Mineral Point	Carpenter Creek	3,000
A. Apple, Mineral Point	Lynch Creek	3,000
Fred Motley, Mineral Point	Hewett Branch	3,000
John Reese, Dodgeville	Sand Creek	6,000
	Harker Creek	6,000
	Stevens Creek	3,000
		60,000
JACKSON COUNTY—		
A. K. James, Melrose	Douglas Creek	3,000
	Spaulding Creek	3,000
	Pleasant Creek	3,000
W. P. Buchanan, Sechlerville	Lone Creek	6,000
Gay R. Sechler, Sechlerville	McWilliams Creek	3,000
	North-West Branch	3,000
Harvey A. Bates, Sechlerville	Lowe Creek	6,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
JACKSON COUNTY—Con.		
W. G. Stolts, Taylor	French Creek	3,000
	Iron Creek	3,000
Fayette Dudley, Alma Center	Judkins Creek	12,000
A. C. Anderson, Taylor	Pine Creek	3,000
	French Creek	3,000
R. K. Frost, Millston	Pigeon Creek	6,000
R. D. Squires, Black River Falls ...	Squaw Creek	3,000
	Allen Creek	3,000
	Snow Creek	3,000
W. F. Gearing, Melrose	Popple Creek	9,000
H. J. Ormsby, Black River Falls ...	Squaw Creek	3,000
	Town Creek	3,000
	Fuller Creek	3,000
Freeman P. Cate, Melrose	Douglas Creek	3,000
	Spaulding Branch	3,000
E. E. Moore, Merrillan	Wrights Creek	6,000
	Van Hessel Creek	3,000
JUNEAU COUNTY—		99,000
Chas. F. Kauffman, Hillsboro	West South Branch of Baraboo River	6,000
J. E. Daly, Necedah	Schoonover Creek	6,000
Jas. Shanks, Strong's Prairie	Gilson Creek	3,000
F. M. Canfield, Necedah	Granby Creek	3,000
Jas. T. Campbell, Necedah	Brigham Creek	3,000
S. H. Reed, Necedah	North Creek	3,000
A. W. Christianson, Necedah	White Creek	3,000
F. M. Reed, Necedah	Schoonover Creek	3,000
Wm. G. Merrill, Necedah	Spring Creek	3,000
F. E. Hurd, New Lisbon	Houghton Creek	9,000
	Fountain Creek	6,000
Jerome O'Connor, Camp Douglas ...	Little Beaver Creek	6,000
W. C. Brawley, Camp Douglas	Little Fountain Creek	3,000
	Hewin Creek	3,000
	Swanets Creek	3,000
	Smiths Creek	3,000
	Lewis Creek	3,000
C. J. Phillips, Camp Douglas	Allens Creek	3,000
	Rocky Creek	3,000
	Bee Creek	3,000
J. M. Barlow, New Lisbon	Little Leomonweir Creek	6,000
		84,000

*Distribution of Fish.***BROOK TROUT FRY PLANTED, 1900—Continued.**

Name and Address of Applicant.	Where Planted.	No. of Fish.
LA CROSSE COUNTY—		
Geo. G. Barber, Mindora	Brown's Creek	3,000
	West Coolie Creek	3,000
Ondin Evanson, West Salem	Halfway Creek	3,000
Henry Genske, Burr Oak	Daves' Creek	3,000
Wm. Smith, Bangor	Fish Creek	3,000
	Dutch Creek	3,000
Alex. Johnson, West Salem	Dutch Creek	3,000
	Barkley Creek	3,000
	McKinley Creek	3,000
Jas. McCord, La Crosse	Martin Creek	3,000
	Jones Creek	3,000
A. Hirshheimer, La Crosse	Krauls Creek	3,000
	Fishback Creek	3,000
D. W. Bradley, La Crosse	N. Brch., Coon Creek	3,000
	Riley Creek	3,000
J. J. Hogan, La Crosse	N. and S. Brchs. of Chip-	
J. K. Johnson, West Salem	monk Creek	6,000
	Fishback Creek	6,000
	McKinley Creek	6,000
Wm. Smith, Bangor	Gills Cooley Creek	3,000
	McEldowney Creek	3,000
	Fish Creek	3,000
	Dutch Creek	3,000
W. J. Scott, Madison	Burns Creek	3,000
	Big Creek	3,000
	Mormon Cooley Creek ...	6,000
	Gills Creek	6,000
LA FAYETTE COUNTY—		93,000
Thomas A. Connelly, Fayette		
Michael Derrick, Fayette	Murphy's Branch	6,000
	Derrick Branch	6,000
LANGLADE COUNTY—		12,000
Geo. W. Burnell, Oshkosh	Evergreen River	12,500
John E. Martin, Antigo	Evergreen River	7,500
H. Babcock, Neenah	Evergreen River	10,000
LINCOLN COUNTY—		30,000
Alex. F. Empey, Merrill	Hay-meadow Creek	6,000
Lew. Heilman, Merrill	Barn's Creek	3,000
Geo. A. Fashdoy, Merrill	Spring Creek	3,000

*Distribution of Fish.***BROOK TROUT FRY PLANTED, 1900—Continued.**

Name and Address of Applicant.	Where Planted.	No. of Fish.
LINCOLN COUNTY—Con.		
John Van Hecke, Merrill	Bates' Creek	6,000
H. D. Dudley, Merrill	Prairie River and Tribs ..	30,000
F. H. Marheine, Clifford	South Fork of Somo Creek ..	6,000
		54,000
MARATHON COUNTY—		
A. L. Kreutzer, Wausau	Plover River and Tribs ..	15,000
Neal Brown, Wausau	Plover River and Tribs ..	15,000
Geo. A. Kreutzes, Athens	Black Creek	5,000
H. J. Blanchard, Colby	Dill Creek	5,000
		40,000
MARINETTE COUNTY—		
E. H. Schwartz, Marinette	North Brch., Beaver Ck. ..	6,000
Geo. W. Taylor, Marinette	Thunder River	15,000
	Hand-saw Creek	12,000
	Beaver Creek	9,000
H. P. Clute, Marinette	Left-foot Creek	15,000
		57,000
MARQUETTE COUNTY—		
Riley Collins, Westfield	Booth Creek	3,000
Frederick Wacholz, Westfield	Wacholz Creek	3,000
Meinke and Behm, Westfield	Kurth Creek	3,000
Albert Rosenbaum, Westfield	Shatzke Creek	3,000
F. W. Meinke, Westfield	Duck Creek	6,000
L. W. Hettinger, Westfield	Cave Creek	3,000
Abe. Hammond, Liberty Bluff	Smith Creek	3,000
G. A. Crawford, Westfield	Newton Creek	6,000
Wm. Gunderjahn, Liberty Bluff	Crafee Creek	6,000
W. F. Ogle, Packwaukee	King Creek	3,000
C. F. Foy, Packwaukee	Cheney Creek	3,000
W. J. Ogle, Packwaukee	Nut Creek	3,000
R. L. Nickerson, Packwaukee	Little Neenah Creek	3,000
C. H. Kempley, Packwaukee	Ennis Creek	6,000
		54,000
MONROE COUNTY—		
F. K. Randall, Sparta	Squaw Creek	6,000
D. A. Baldwin, Sparta	Indian Creek	3,000
	Swamp Creek	3,000
Fred Gross, Sparta	Leon Creek	3,000
John O'Brien, Sparta	Beaver Creek	3,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
MONROE COUNTY—Con.		
G. M. Newton, Sparta	Sargent Creek	3,000
W. G. Bartlett, Sparta	Silver Creek	3,000
	Swamp Creek	3,000
Paul Schaller, Sparta	Little Silver Creek	3,000
Chas. Marquette, Kendall	Brainard's Creek	3,000
	Foxes' Creek	3,000
Chas. Todd, Wilton	Trainor's Creek	6,000
Saml. Sloggy, Ontario	Brush Creek	3,000
	Billings Creek	3,000
	Moore's Creek	3,000
	Cook Creek	3,000
Saml. Cholvin, Ontario	Billings Creek	3,000
	Brush Creek	3,000
Wm. Fletting, Tomah	Mill Creek	3,000
	Mud Creek	3,000
	Deer Creek	3,000
Wm. Scholtz, Tomah	Council Creek	3,000
Fred Eldredge, Tomah	Tar Creek	3,000
G. A. Leak, Tomah	Sparta Creek	3,000
Clarence Wells, Tomah	Squaw Creek	3,000
M. L. Hineman, Tomah	Council Creek	6,000
D. T. Moseley, Warrens	West Creek	3,000
	Middle Creek	3,000
		93,000
OCONTO COUNTY—		
John J. Hof, Sobleski	Little Suamico River	6,000
PEPIN COUNTY—		
Hiram Potter, Pepin	Bogus Creek	3,000
	Roaring River	3,000
Hiram Fuller, Pepin	Lost Creek	6,000
Wm. H. Smith, Eau Galle	Big and Little Missouri Creeks	5,000
		17,000
PIERCE COUNTY—		
H. G. Eklund, Moeville	Little Trimble Creek	6,000
Frank Alexander, Rock Elm	Plum Creek	6,000
A. O. Belfanz, Rock Elm	Little Missouri Creek	6,000
W. C. Condit, Rock Elm	Plum Creek	6,000
W. H. Radschlag, Rock Elm	Cave Creek	3,000
Frank Horn, Rock Elm	Missouri Creek	3,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
PIERCE COUNTY—Con.		
J. W. Lossey, La Crosse	Rush River	15,000
W. W. Walsingham, Ellsworth	Lost Creek	6,000
M. M. Walters, Ellsworth	Trimbelle Creek	6,000
F. D. Lord, Ellsworth	Little Trimbelle Creek ...	6,000
Nils P. Haugen, River Falls	Nyes Creek	6,000
	Kinnickinnic River	6,000
E. A. Tobey, River Falls	Tids Creek	6,000
C. R. Morse, River Falls	Kinnickinnic River	6,000
	South Fork	6,000
		93,000
POLK COUNTY—		
Marion Howe, Inlet	Wolf Creek	5,000
PORTAGE COUNTY—		
J. N. Ranbeck, Peru	Trlbs., Tomorrow River ..	6,000
Henry Stoltenberg, Nelsonville	Tributary of Waupaca River	6,000
A. C. Wilson, Amherst	Tomorrow River	6,000
John Een, Amherst	Een Creek	6,000
Louis Zimmer, Stevens Point	Little Plover River	6,000
A. J. Anderson, Amherst	Tomorrow River	6,000
A. M. Nelson, Stevens Point	Linwood Creek	6,000
Fred Minnebeck, Stevens Point	Little Plover River	6,000
		48,000
PRICE COUNTY—		
H. L. Wartenberg, Ffield	Price Creek	5,000
Rublee A. Cole, Milwaukee	Little Betsy Creek	5,000
		10,000
RACINE COUNTY—		
Geo. E. Quinn, Caldwell	Beardsley Spring	6,000
RICHLAND COUNTY—		
A. D. Waterma, Lone Rock	Four Spring Creek	3,000
J. L. Hodson, Lone Rock	Booth Hollow Creek	3,000
Geo. Jameson, Lone Rock	Fayin Creek	3,000
H. W. Haskell, Sr., Lone Rock	Carroll Creek	3,000
	Big Bear Creek	3,000
C. S. Fuller, Lone Rock	Big Bear Creek	3,000
A. J. Dickerson, Lone Rock	Hollenbeck Creek	3,000
Omer Allison, Buckeye	Fancy Creek	3,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
RICHLAND COUNTY—Con.		
K. C. Smith, Richland Center	Butcher's Branch	3,000
W. A. McNulen, Richland City	Buck-horn Creek	3,000
	Acky's Creek	3,000
Frank Bowen, Richland Center	Willow Creek	3,000
W. H. Devoe, Richland Center	Hawkins Creek	3,000
C. C. Fries, Richland Center	Brush Creek	3,000
S. A. J. Bird, Richland Center	Fancy Creek	3,000
C. E. Dosch, Richland Center	Sharps Branch	3,000
Earl Walter, Viola	Trout Creek	3,000
L. Barber, Viola	Bishop Creek	3,000
Chas. H. Kinzie, Richland Center ...	Big Willow Creek	3,000
R. P. Clark, Viola	Loveless Creek	3,000
J. H. Frazier, Viola	Benn Creek	3,000
ST. CROIX COUNTY—		63,000
F. F. Gray, Hudson	Willow River	5,000
S. W. Bandy, Hudson	Willow River	5,000
Otto W. Arnuist, Hudson	Willow River	5,000
John Quaid, Star Prairie	Sucker Branch	5,000
J. E. Jones, Hudson	Willow River	5,000
P. B. Day, New Richmond	Ten-mile Creek	5,000
S. C. Boardman, New Richmond	Ten-mile Creek	5,000
J. O. Wilford, Baldwin	Wood's Creek	5,000
Fred Horshman, Lost Creek	Lost Creek	5,000
S. L. Pickett, Wilson	Wilson Creek	5,000
P. E. De Mille, Baldwin	Rush River,	5,000
S. S. Holmes, Baldwin	Timberlake Creek	5,000
A. J. Flemington, Glenwood	John's Creek	5,000
Kittl. Stensrud, Glenwood	Little Beaver Creek	2,500
O. S. Follansbee, Glenwood	Sand Creek	2,500
SAUK COUNTY—		70,000
R. P. Perry, Reedsburg	Copper Creek	3,000
E. G. Stolte, Reedsburg	Narrows Creek	3,000
H. Scherve, Reedsburg	Copper Creek	3,000
Jas. A. Roberts, Reedsburg	Ely's Creek	3,000
B. D. Sherwood, Spring Green	Bear Creek	3,000
	Wilson Creek	3,000
John E. Morgan, Spring Green	North Honey Creek	3,000
E. J. James, Spring Green	Snead Creek	3,000
Ben Davis, Spring Green	Wilson Creek	3,000
E. J. Farr, Prairie du Sac	Otter Creek	3,000
		30,000

*Distribution of Fish.***BROOK TROUT FRY PLANTED, 1900—Continued.**

Name and Address of Applicant.	Where Planted.	No. of Fish.
SAWYER COUNTY—		
Robert C. Pugh, Hayward	McDermott Creek	2,500
	Ayers Creek	2,500
SHAWANO COUNTY—		
Hugh R. Edwards, Whitcomb	Whitcomb Creek	5,000
E. Elefson, Eland	Norrie Creek	5,000
H. R. Fuller, Eland	Eland Creek	6,000
W. J. Hagen, Eland	Branch of Embarass River	5,000
SHEBOYGAN COUNTY—		
T. C. Sharpe, Elkhart Lake	Mullet Creek	20,000
		12,000
TAYLOR COUNTY—		
Jas. H. McManus, Rib Lake	James Lake	10,000
John C. Lee, Medford	Mink Creek	2,500
J. C. Hobbs, Medford	Mink Creek	5,000
Frank N. Cleveland, Medford	Mink Creek	5,000
		22,500
TREMPEALEAU COUNTY—		
J. J. Fernholz, Arcadia	Branch of Cowles Creek	6,000
John F. Case, Arcadia	American Valley Creek	6,000
Fred Wiffle, Arcadia	Meyers Valley Creek	6,000
		18,000
VERNON COUNTY—		
C. T. Shannon, Westby	Upper Spring Creek	3,000
M. B. Davidson, Westby	West Fork of West Kickapoo	3,000
C. J. Skough, Westby	Heiren Springs	3,000
A. H. Dahl, Westby	Skaaland Creek	6,000
F. A. Chase, Viroqua	Bishop Branch	6,000
C. D. Williams, Viroqua	South Bad-ax	6,000
Frank S. Mott, Viroqua	Springfield Branch	6,000
Hans Sjerne, Westby	Thorpe Creek	3,000
J. K. Schreiner, Westby	Bagley Creek	3,000
J. J. Midthum, Readstown	Mill Creek	3,000
H. A. Lombard, La Farge	Lower Bear Creek	3,000
	Otter Creek	3,000
G. W. Henika, Readstown	Day Creek	3,000
C. W. Reeve, Readstown	Brookville Creek	3,000
Otis Warner, Stoddard	Warner Creek	6,000
		60,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
VILAS COUNTY—		
M. H. Barnum, Minocqua	Little Tomahawk Creek ..	6,000
	Mercer Creek	3,000
E. S. Brown, Star Lake	Bucktaban Creek	6,000
V. C. Langley, Star Lake	Lost Creek	6,000
Alex. Blue, Star Lake	Langley Creek	6,000
Wm. Eckles, Star Lake	Bucktaban Creek	6,000
Salsich and Wilson, Star Lake	Plum Creek	6,000
M. F. Doyle, Minocqua	Little Tomahawk Creek ..	6,000
		45,000
WALWORTH COUNTY—		
C. B. Alrick, Whitewater	Harris Creek	3,000
	Galloway Creek	3,000
Edward McDougall, Whitewater ...	Bluff Creek	3,000
Chas. S. Weeks, Whitewater	Bradway Creek	3,000
T. D. Weeks, Whitewater	Territorial Creek	3,000
	Goulds Brook	3,000
Ed. Hahn, Whitewater	Caswell Creek	3,000
H. L. Halverson, Whitewater	Steel Creek	3,000
H. D. Winne, Whitewater	Steel Creek	3,000
W. C. Cuman, Whitewater	Cox Creek	3,000
J. E. Reynolds, Whitewater	Bunker Creek	3,000
E. D. Fiske, Delavan	Turtle Creek and Tribs ..	6,000
J. A. Collins, Delavan	Bunker Creek	3,000
	Coal Creek	3,000
	Spring Creek	3,000
		48,000
WASHBURN COUNTY—		
Geo. Tozer, Spooner	Beaver Creek	2,500
Wm. Busch, Spooner	Beaver Creek	2,500
Geo. W. Harmon, Spooner	Mud Creek	2,500
E. M. Tallman, Spooner	Little McKay Branch	2,500
Wm. Kellene, Spooner	Tozer Creek	2,500
J. J. Hohl, Minong	Little Frog Creek	5,000
G. F. Duncan, Spooner	Potato Creek	2,500
Andrew Ryan, Shell Lake	New Knapp Creek	5,000
	Sawyer Creek	5,000
	Bashaw Creek	5,000
	Dahlstorm Creek	2,500
	Beaver Creek	2,500
		40,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WAUKESHA COUNTY—		
T. H. Carlin, North Prairie	Scupernong Creek	6,000
Wm. H. Tuohy, Eagle	Long's Creek	3,000
	Eagleville Creek	3,000
J. M. Pereles, Milwaukee	Minnehaha Creek	6,000
J. R. Dittrich, Oconomowoc	Schufelt Creek	3,000
Chas. Pink, Oconomowoc	Battletown Creek	3,000
Dr. F. F. Machus, Oconomowoc	Benders Creek	3,000
Danl. Crowley, Mukwonago	Mystic Springs	6,000
		33,000
WAUPACA COUNTY—		
Geo. Dale, Iola	Head-waters, Waupaca River	6,000
L. M. Jackson, Manawa	South Branch of Little Wolf River	6,000
A. M. Peterson, Scandinavia	James Creek	6,000
C. H. Anderson, Scandinavia	South-West Branch of Little Wolf River	6,000
Chas. Austin, Cedar Lake	Van Ostrands Creek	6,000
O. J. Olfson, Sheridan	Silver Creek	6,000
H. Olfson, Sheridan	Waupaca River	6,000
Edward E. Browne, Waupaca	Emmons Creek	6,000
	Radley Creek	3,000
	Pest-house Creek	3,000
		54,000
WAUSHARA COUNTY—		
M. Westover, Pine River	Carpenter's Spring	3,000
Frank Chace, Pine River	Chace's Creek	6,000
Fred Dewey, Pine River	Lower Pine River	6,000
Truman Sears, Pine River	Little Spring Creek	6,000
Bert Smith, Coloma Station	Chaffee Creek	3,000
Bartz Bros., Coloma Station	Petwood Creek	3,000
F. M. Smith, Coloma Station	Cawlin Creek	3,000
B. L. Dulin, Coloma Station	Lunch Creek	3,000
H. J. Hawkins, Coloma Station	Willard Creek	3,000
Thomas Fearne, Coloma Station	Hall Creek	6,000
John Shorey, Coloma Station	Rochacris Creek	3,000
William Smith, Coloma Station	Wedde Creek	3,000
W. H. Campfield, Hancock	McCann River	6,000
J. W. Gray, Hancock	Big Rochacris Creek	3,000
L. W. Beach, Hancock	Little Rochacris Creek ..	3,000
Chas. C. Rodgers, Richford	Runnals Creek	3,000

Distribution of Fish.

BROOK TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WAUSHARA COUNTY—Con.		
Otto Bartels, Richford	Whalley Creek	3,000
M. A. Fuller, Hancock	Little Rochacris Creek ...	3,000
Theo. Wedde, Richford	Wedde Creek	6,000
H. C. Rhode, Wautoma	Lunch Creek	6,000
Gilbert Tennant, Wautoma	Lunch Creek	6,000
W. A. Edwards, Wautoma	Pine Creek	6,000
W. H. Berray, Wautoma	Decker Creek	6,000
Jas. T. EHareon, Wautoma	White River	6,000
	Mecan River	6,000
L. Evans, Wild Rose	Clayton Creek	3,000
D. W. Jones, Wild Rose	South Brch., Pine Creek..	3,000
S. Van Rosem, Wild Rose	Jones Creek	3,000
C. A. Smart, Wild Rose	Evans Creek	3,000
F. M. Clark, Wild Rose	Willow Creek	3,000
WOOD COUNTY—		126,000
Oftelle and Stondahl, Madison	East Fork, Black River ..	6,000
A. D. Hill, Grand Rapids	Two-mile Creek	6,000
Geo. M. Huntington, Grand Rapids .	Harvey Creek	6,000
A. M. Mulr, Grand Rapids	Four Mile Creek	3,000
	Harvey Creek	3,000
W. C. Martin, Grand Rapids	Four Mile Creek	3,000
		27,000
Total distribution, 1900.....		2,243,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1900.

Name and Address of Applicant.	Where Planted.	No. of Fish.
ADAMS COUNTY—		
Jesse Kent, Strong's Prairie	Nelson Creek	4,000
Orlando Mathews, Big Flats	Fourteen-mile Creek	2,000
	Devacusa Creek	2,000
		8,000
ASHLAND COUNTY—		
Theo. R. Yankee, Ashland	Stony Brook	4,000
BARRON COUNTY—		
J. E. Horsman, Rice Lake	Miller Creek	6,000
E. A. Palmer, Turtle Lake	Beaver Brook	4,000
F. Hildebrandt, Rice Lake	Deltz Lake and Creek	4,000
D. D. Page, Barron	Miller Creek	2,000
	Englert Creek	2,000
W. O. Hood, Barron	Miller Creek	4,000
G. S. Pratt, Barron	Miller Creek	4,000
		26,000
BAYFIELD COUNTY—		
J. L. Sayles, Pratt	Eighteen-mile Creek	4,000
	Twenty-mile Creek	6,000
		10,000
BROWN COUNTY—		
A. Bungener, Green Bay	Ellis Brook	4,000
BUFFALO COUNTY—		
C. S. Kenyon, Gilmanton	Mill Pond	4,000
J. W. Whelan, Mondovi	Rossmann Creek	2,000
	Fifteen-mile Creek	2,000
John D. Pace, Mondovi	Hayes Creek	2,000
	Armour Creek	2,000
John Maloney, Mondovi	Dutch Creek	2,000
Thos. Ward, Mondovi	Ford Creek	2,000
	Mill Creek	2,000
Carl Claffin, Mondovi	Dillon Creek	2,000
J. M. Pratt, Gilmanton	Pratts Creek	2,000
	Elk Creek	2,000
Herman Kolb, Alma	Trout Creek	4,000
	Schultz Creek	2,000
	Pine Creek	2,000
		32,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
CHIPPEWA COUNTY—		
F. W. Jenkins, Chippewa Falls	Duncan Creek	4,000
C. L. Christianson, Bloomer	Duncan Creek	4,000
E. H. Rodgers, Bloomer	Duncan Creek	4,000
	Gunn Creek	2,000
		14,000
CLARK COUNTY—		
J. F. Konecny, Dorchester	Eaupleine River	4,000
J. J. Servaty, Neillsville	Hewett Creek	4,000
Chas. Servaty, Neillsville	Wedges Creek	4,000
		12,000
COLUMBIA COUNTY—		
S. H. Hinde, Lodi	Spring Creek	4,000
L. N. Coaphan, Wyocena	Rocky Run	4,000
E. Hinkson, Poynette	Pine Hollow Creek	4,000
Rockafellow and Son, Fall River ...	Trib. of Crawfish Ck.	4,000
W. G. Bissell, Lodi	Spring Creek	4,000
		20,000
CRAWFORD COUNTY—		
J. W. Lewis, Bell Center	Sand Creek	2,000
Atley Peterson, Soldiers Grove	Soldiers Grove Creek	8,000
J. O. Davidson, Madison	Knapps Creek	4,000
	Trout Creek	4,000
		18,000
DANE COUNTY—		
O. R. Herring, Cross Plains	Head of Black Earth Creek	4,000
E. D. Herring, Cross Plains	Head of Black Earth Ck. .	4,000
H. H. Willard, Mazomanie	Boyles Creek	4,000
Chas. Butz Jr., Mazomanie	Ryan Creek	4,000
Jas. Kenney, Mount Horeb	Sugar River	4,000
C. A. Hanan, Oregon	S. Branch, Bad-dish Ck. .	4,000
		24,000
DODGE COUNTY—		
J. V. Northrup, Waupun	Rock River	4,000
DOOR COUNTY—		
Robert Logan, Jacksonport	Logan Creek	8,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
DOUGLAS COUNTY—		
Gordon Young, Gordon	Island Lakes	8,000
Henry Beglinger, Superior	Half-way Lake	4,000
N. Lucius Jr., Solon Springs	Brule River	6,000
	Ox Creek	2,000
		20,000
DUNN COUNTY—		
L. Ingraham, Menomonie	Lambs Creek	4,000
EAU CLAIRE COUNTY—		
Frank Shule, Altoona	Six-mile Creek	4,000
	Nine-mile Creek	4,000
		8,000
FOND DU LAC COUNTY—		
John Hill, Ripon	Silver Creek	2,000
	Powell Creek	2,000
T. S. Chittenden, Ripon	Silver Creek	2,000
H. P. Cody, Ripon	Silver Creek	2,000
H. L. Barnes, Ripon	Silver Creek	2,000
W. R. Brietenstein, Fond du Lac ...	Fisher Creek	4,000
Chas. F. Geisse, Fond du Lac	Trib., Milwaukee River ...	4,000
FOREST COUNTY—		
John Kiernan, Armstrong Creek ...	Armstrong Creek	18,000
P. Shay, Armstrong Creek	Armstrong Creek	10,000
Mrs. V. H. Johns, Waubeno	Waubeno Trib., Oconto R.	10,000
		20,000
		40,000
GRANT COUNTY—		
S. J. Hasler, Muscoda	Hoosier Creek	6,000
H. E. M. Briggs, Muscoda	Wall Branch	4,000
		10,000
GREEN COUNTY—		
P. H. White, Monroe	Honey Creek	4,000
GREEN LAKE COUNTY—		
Geo W. Morton, Berlin	Spencer Creek	2,000
Frank Morris, Berlin	Stevens Creek	2,000
F. W. Catanch, Berlin	Barnes Creek	2,000
		6,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
IOWA COUNTY—		
Adair Apple, Mineral Point	Grabers Creek	4,000
J. M. Mulhairn, Mineral Point	Synches Creek	4,000
Geo. D. Masten, Mineral Point	Berg Creek	4,000
Jas. A. Clemenston, Mineral Point ..	Rock Branch	2,000
Wm. Cramer, Jonesdale	Spring Branch	4,000
John Tobin, Jonesdale	Carters Creek	4,000
Josephus Bailey, Cobb	Head-waters, Blue River ..	4,000
W. E. Williams, Dodgeville	Spring Creek	4,000
Fred Jewell, Dodgeville	Head of Pecatonica R. ...	4,000
H. M. Jewell, Dodgeville	Head of Pecatonica R. ...	4,000
John Reese, Dodgeville	Mill Creek	8,000
		46,000
IRON COUNTY—		
Calvin Doriot, Manitowish	Spring Brook	4,000
JACKSON COUNTY—		
J. Ware, Alma Center	Cisna Creek	4,000
E. A. Miller, Hixton	North and South Brchs., Trempealeau River	4,000
Fayette Dudley, Alma Center	Halls Creek	8,000
		16,000
JUNEAU COUNTY—		
P. F. Rossman, Elroy	N. Brch., Baraboo River ..	4,000
C. F. Kauffman, Hillsboro	West-South Brch., of Bara- boo River	4,000
Carl Bergman, Lyndon Station	Lyndon Creek	4,000
C. J. Phillips, Camp Douglas	Fountain Creek	4,000
	Alds Creek	2,000
	Allen Creek	2,000
		20,000
KEWAUNEE COUNTY—		
P. A. Haevers, Green Bay	Clyde Creek	6,000
E. M. Squier, Casco	Decker Creek	6,000
		12,000
LA CROSSE COUNTY—		
Mills Tourtellotte, La Crosse	Arutz Creek	4,000
Jas. McCord, La Crosse	Kralls Creek	4,000
A. Hirshheimer, La Crosse	N. Brch., Coon Creek	4,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
LA CROSSE COUNTY—Con.		
Benedict Ott, La Crosse	Sand Lake Cooley	4,000
Jas. J. Hogan, La Crosse	Fishback Ck.	4,000
Wm. Smith, Bangor	Dutch Creek	2,000
	Fish Creek	2,000
	Big Creek	2,000
	Burnham Valley Creek ...	2,000
		28,000
LA FAYETTE COUNTY—		
M. P. Kennedy, Gratiot	Craig Creek	2,000
	Goose Creek	2,000
C. H. Gribble, Platteville ...	Block-House Branch	4,000
W. E. Robinson, Blanchardville ...	Soper Creek	4,000
Jas. Blanchard, Blanchardville	Soper Creek	4,000
		16,000
LANGLADE COUNTY—		
Anton Follstad, Elcho	Seafeldt Creek	4,000
C. W. Maney, Elcho	Clear Lake	6,000
		10,000
LINCOLN COUNTY—		
A. Howen, Tomahawk	Half-moon Lake	4,000
W. H. Flett, Merrill	Prairie River	8,000
	Copper Creek	2,000
G. A. Fashdoy, Merrill	Spring Creek	4,000
H. Ackerman, Merrill ...	Spring Lake	10,000
W. H. Bradley, Tomahawk	Squaw and Pine Creeks...	4,000
		32,000
MANITOWOC COUNTY—		
Julius Linstedt, Manitowoc	East Twin River	8,000
Rev. H. Mueller, Larrabee	Tributary, Manitowoc R..	4,000
		12,000
MARATHON COUNTY—		
Anton Milanowski, Pike Lake	Pike Lake	4,000
A. L. Kreutzer, Wausau	Plover River & Tribs ...	10,000
Neal Brown, Wausau	Plover River & Tribs.. ...	10,000
		24,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
MARINETTE COUNTY—		
Geo. W. Taylor, Marinette	N. Brch., Beaver Ck.	4,000
	Smith Creek	4,000
	Shepherd Creek	4,000
	Medicine Creek	4,000
F. J. Bartels, Crivitz	N. & S. Brchs., Wausau- kee	4,000
	Little Pike River	4,000
	S. Brch., Eagle River....	4,000
L. F. Hale, Crivitz	Middle Inlet	4,000
	S. Brch., Pike River	8,000
John Underwood, Wausaukee	Rush Lake	20,000
		60,000
MARQUETTE COUNTY—		
Thos. Wells Jr., Neshkoro	White River	4,000
Wm. Guderjahn, Liberty Bluff.	Chaffee Creek	4,000
A. Hammond, Liberty Bluff	Crawford Creek	4,000
J. H. Coon, Oxford ..	Rock Creek	2,000
C. Conger, Oxford	Durks Creek	2,000
W. Cummings, Oxford	Mill Creek	2,000
Frank Hopwood, Oxford	Bush Creek	2,000
C. H. Kempley, Packwaukee	Ennis Lake	4,000
A. Rosenbaum, Westfield	Shatzke Creek	4,000
L. W. Hettinger, Westfield	Upper Duck Creek	4,000
W. J. Ogle, Oxford	Hayes Creek	2,000
		34,000
MILWAUKEE COUNTY—		
Frank P. Ziegler, Milwaukee	De Nocn Lake	4,000
MONROE COUNTY—		
Chas. Todd, Wilton	Thomas Creek	4,000
Saml. Sloggy, Ontario ...	Brush Creek	2,000
	Billings Creek	2,000
	Cooks Creek	2,000
	Moors Creek	2,000
H. C. Spaulding, Tomah	Silver Creek	4,000
		16,000
ONEIDA COUNTY—		
Gustave Kloes, Three Lakes	Eagle River	4,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
OUTAGAMIE COUNTY—		
A. H. Pape, New London	Madman Creek	4,000
OZAUKEE COUNTY—		
Ernest G. Memmler, Thiensville ...	Tributary, Milwaukee River.	4,000
PIERCE COUNTY—		
C. R. Morse, River Falls	Kinnickinnic River	4,000
	South Fork	4,000
E. W. Walsingham, Ellsworth	Brush Creek	4,000
Nils P. Haugen, River Falls	Kinnickinnic River below the falls	8,000
John Stowell, Martell	Upper Rush River	4,000
O. E. Bonsner, Martell	Iverson Creek	4,000
H. C. Stark, Martell	Rush River	4,000
Frank Horn, Rock Elm.	Missouri Creek	4,000
J. W. Losey, La Crosse	Rush River	20,000
		56,000
POLK COUNTY—		
M. Smith, Osceola Mills	North Fork of Bull Brook	4,000
I. N. Bye, Little Falls	Sucker Branch	4,000
		8,000
PORTAGE COUNTY—		
Benjamin Fleming, Amherst	Waupaca River	4,000
A. M. Nelson, Stevens Point	Rocky Run	4,000
John Een, Amherst	Een's Brook	4,000
John S. Loberg, Nelsonville	Waupaca River	4,000
		16,000
PRICE COUNTY—		
Rublee A. Cole, Milwaukee	Little Betsy Creek	4,000
	Tributary of Flambeau River	4,000
W. P. Sperry, Phillips	Eagle River and Tribs.	20,000
		28,000
RICHLAND COUNTY—		
H. B. Allen, Richland Center	Leatherberry Creek	2,000
Henry Berger, Twin Bluffs	Ash Creek	2,000
Christian Berger, Richland Center..	Ash Creek	2,000
C. S. Fuller, Lone Rock	Big Bear Creek	2,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
RICHLAND COUNTY—Con.		
A. D. Waterman, Lone Rock	Four Spring Creek	2,000
H. W. Haskell, Sr., Lone Rock	Carroll Creek	2,000
	Norwegian Creek	2,000
A. J. Dickerson, Lone Rock	Doyle Creek	2,000
J. H. Sumner, Lone Rock	Venwood Creek	2,000
M. S. Bowler, Richland Center	Trib., Willow Creek	4,000
Chas. H. Kenzle, Richland Center...	Little Willow Creek	2,000
	Kegons Creek	2,000
Hans Frederickson, Loyd	Willow Creek	2,000
		28,000
ROCK COUNTY—		
N. T. Slanson, Evansville	Trouble Spring Creek.	4,000
ST. CROIX COUNTY—		
O. B. Day, New Richmond	Willow River	4,000
F. F. Gray, Hudson	Willow River	4,000
Otto W. Arnquist, Hudson	Willow River	4,000
J. C. Harding, Martell	Upper Rush River	4,000
J. E. Jones, Hudson	Willow River	4,000
S. W. Bandy, Hudson	Willow River	4,000
		24,000
SAUK COUNTY—		
J. W. Proctor, Spring Green	Wyoming Creek	4,000
L. A. Brown, Spring Green	Wilson Creek	4,000
W. C. Cook, Prairie du Sac	Fish Lake	4,000
A. G. Baldwin, Prairie du Sac	Crystal Lake	4,000
H. M. Mather, Prairie du Sac	Otter Creek	2,000
E. J. Farr, Prairie du Sac	Otter Creek	4,000
A. A. Brownell, Reedsburg	Big Creek	4,000
E. G. Stolte, Reedsburg	Big Creek	2,000
Fred Stewart, Reedsburg	Twin Creek	2,000
F. A. Foss, Reedsburg	Beaver Creek	2,000
		32,000
SAWYER COUNTY—		
Harry Shue, Hayward	Nemacogin River	40,000
SHAWANO COUNTY—		
Wm. Leiskau, Birnamwood	N. Brch., Embarass River	4,000
R. B. Glaubitz, Wittenberg	Middle Brch., Embarassa	8,000
Wall Spaulding Lumber Co., Osh- kosh	Comet River	8,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
SHAWANO COUNTY—Con.		
W. G. Heins, Wittenberg	South Brch., Embarrass R.	4,000
J. G. Brunner, Wittenberg	Middle Brch., Embarrass ..	4,000
D. E. Wescott, Shawano	Wolf River	10,000
		38,000
SHEBOYGAN COUNTY—		
John Grey, Sheboygan Falls	Mullet River	4,000
H. H. Fiebig, Sheboygan Falls	Sheboygan River	4,000
A. A. Meggett, Madison	Pigeon River	4,000
J. W. Leibenstein, Scott	Batavia Creek	4,000
W. H. Peterson, Waldo	Onion River	4,000
F. L. Carroll, Plymouth	Mullet River	4,000
		24,000
TAYLOR COUNTY—		
T. G. Jeffers, Medford	Moltors Creek	4,000
TREMPEALEAU COUNTY—		
E. F. Clark, Galesville	Beaver Creek	4,000
	Dunn Creek	2,000
F. G. Davis, Galesville	Beaver Creek	2,000
	Maars Creek	2,000
	Big & Little Tamarack Creeks	4,000
H. L. Ekern, Whitehall	Elk Creek	4,000
J. H. Sprecher, Independence	Chimney Rock Creek	4,000
		22,000
VERNON COUNTY—		
H. A. Lombard, La Farge	Otter Creek	2,000
	Bear Creek	2,000
J. H. Frazier, Viola	Huffman Creek	4,000
R. P. Clark, Viola	Loveless Creek	2,000
G. W. Henika, Readstown	Brookville Creek	2,000
	Day Creek	2,000
L. Barber, Viola	Bear Creek	2,000
H. K. Stratton, Viola	Jug Creek	2,000
Wm. Lind, Hillsboro	West Brch., Baraboo River	4,000
		22,000
VILAS COUNTY—		
W. J. Walsh, Eagle River	Skling Creek	4,000
Chas. Corrigan, Woodruff	East Allequash Ck.	4,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
VILAS COUNTY—Con.		
C. J. Coon, Woodruff	Trout Creek	4,000
Oliver Goff, Woodruff	Goffs Creek	4,000
Fred Morey, Eagle River	Deer Skin River	4,000
A. McKinzie, Eagle River	Deer Skin River	4,000
John Green, Eagle River	Rock Creek	4,000
Harry Jones, Eagle River	Kentucky Lake	8,000
Bent Bros., State Line	Black Oak Lake	4,000
Paul Ledusere, Woodruff	Crooked Lake	4,000
D. H. Sargent, Conover	Muskrat Creek	10,000
Peter Stein, Star Lake	Lake Laura	4,000
M. H. Barnum, Minocqua	Little Tomahawk Creek ..	8,000
E. S. Brown, Star Lake	Rock Lake	4,000
V. C. Langley, Star Lake	Lake Laura	2,000
Alex. Blue, Star Lake	Langley Lake	2,000
Wm. Eckels, Star Lake	A small spring lake	2,000
Salsich and Wilson	Plum Lake	4,000
J. W. Landt, Star Lake	Lake Agnes	2,000
		82,000
WALWORTH COUNTY—		
Ed. Hahn, Whitewater	Gleason Creek	2,000
Chas. S. Weeks, Whitewater	Andover Creek	2,000
Ed. Engleretsend, Whitewater	Steele Creek	2,000
H. L. Halverson, Whitewater	Spring Creek	2,000
C. B. Alrick, Whitewater	Harris Creek	2,000
T. D. Weeks, Whitewater	Territorial Creek	2,000
	Gould Creek	2,000
A. F. Caldwell, Whitewater	Bluff Creek	4,000
T. E. Burrows, Delavan	Coal Creek	4,000
J. A. Collins, Delavan	New Discovery Creek	4,000
		26,000
WASHBURN COUNTY—		
W. C. Crocker, Spooner	Lower Potato Creek	4,000
Wm. Busch, Spooner	Spring Brook	6,000
Geo. W. Harmon, Spooner	Yellow River	4,000
G. F. Duncan, Spooner	Randall Creek	4,000
Wm. Kellene, Spooner	Bussell Creek	4,000
J. J. Hohl, Minong	Little Frog Creek	4,000
		26,000
WASHINGTON COUNTY—		
Anton Thielman, Richfield	Oconomowoc R.	4,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WAUKESHA COUNTY—		
H. M. Loibl, Eagle	Minnehaha Creek	2,000
Harry Dreyer, Waukesha	Jericho Creek	8,000
A. T. Stebbins, Eagle	Jericho Creek	2,000
J. McD. Randles, Waukesha	Bidwells Creek	4,000
Jas. M. Pereles, Milwaukee	Minnehaha Springs	6,000
J. A. Lins, Eagle	Brch., Scupernong Creek	6,000
J. R. Dittrich, Oconomowoc	Schuelfeldt Creek	4,000
Chas. Pink, Oconomowoc	Bottletown Creek	4,000
F. F. Machus, Oconomowoc	Bender Creek	4,000
		40,000
WAUPACA COUNTY—		
H. A. Werner, Clintonville	Jones Creek	4,000
G. H. Putnam, New London	Caren Creek	2,000
	Maple Creek	2,000
A. Netzel, Clintonville	Hyde Creek	2,000
John Hickey, New London	Carew Creek	2,000
	Maple and Rohan Cks. ...	2,000
C. L. Perry, Marlon	North Brch., Pigeon R. ...	4,000
O. J. Olsson, Sheridan	Silver Creek	4,000
Wm. Rutherford, Waupaca	Pearl Creek	4,000
E. E. Browne, Waupaca	Fountain Lake and Creek	4,000
A. Weinmann, Jr., Iola	Comet Creek	4,000
		34,000
WAUSHARA COUNTY—		
J. W. Hollenbeck, Auroraville	Willow Creek	2,000
John Fuller, Spring Lake	Hills's Lake	2,000
Maurice Morarity, Rodney	Maars Creek	2,000
W. L. Roberts, Wautoma	Mecan River	8,000
A. Preno, Coloma Station	Berry Creek	4,000
H. F. Bartz, Coloma	Mecan River	2,000
J. H. Hopper, Coloma Station	Mecan River	2,000
Wm. Smith, Coloma Station	Cowland Creek	2,000
M. A. Fuller, Hancock	Little Rochacris Creek	4,000
		28,000
WOOD COUNTY—		
Geo. L. Williams, Grand Rapids	Wisconsin River	2,000
Geo. W. Baker, Grand Rapids	Four-mile Creek	2,000
W. J. Granger, Centralia	Branch of Four-mile Ck. ...	2,000
Geo. M. Huntington, Grand Rapids	Four-mile Creek	2,000

Distribution of Fish.

RAINBOW TROUT FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WOOD COUNTY—Con.		
A. M. Muir, Grand Rapids	Harvey Creek	2,000
J. E. Brazeau, Grand Rapids	Wisconsin River	2,000
B. F. Haskins, Centralia	Nutter Creek	2,000
E. A. Benson, Vesper	Hemlock Creek	4,000
		18,000
Total distribution, 1900 .....	.....	1,244,000

Distribution of Fish.

WALL-EYED PIKE FRY PLANTED, 1900.

Name and Address of Applicant.	Where Planted.	No. of Fish.
ADAMS COUNTY—		
J. E. English, Baraboo	Emerick Lake	350,000
BAYFIELD COUNTY—		
Henry Sykes, Bayfield	Planted in Chequamegon Bay	3,000,000
CHIPPEWA COUNTY—		
E. X. Adams, Boyd	Pike Lake	210,000
W. J. Ickstedt, Boyd	Pike Lake	210,000
S. R. Kaiser, Cadott	Pike Lake	280,000
		700,000
COLUMBIA COUNTY—		
Frank Smith, Pardeeville	Fox River above Pardee- ville Dam	350,000
G. W. Deussenberry, Pardeeville	Pardeeville Lake	140,000
		490,000
CRAWFORD COUNTY—		
J. O. Davidson, Madison	Kickapoo River	420,000
DANE COUNTY—		
F. Suthers, Madison	Planted in Lake Mendota	7,000,000
C. R. Schepley, Stoughton	Lake Kegonsa	420,000
C. L. Valentine, Janesville	Lake Waubesa	420,000
H. C. Netherwood, Madison	Lake Wingra	350,000
		8,190,000
DODGE COUNTY—		
A. Bachhuber, Mayville	Rock River	350,000
M. A. Jacobs, Beaver Dam	Beaver Dam Lake	700,000
C. F. Wege, Hustisford	Rock River	280,000
	Hustisford Pond	140,000
		1,470,000
FLORENCE COUNTY—		
C. O. Coleman, Florence	Sea Lion Lake	280,000
W. W. Noyes, Forence	Pattern Lake	280,000
W. B. Kniskern, Chicago, Ill.	Spread Eagle Lake	420,000
		980,000
FOND DU LAC COUNTY—		
Steffes Brothers, Wolf Lake	Wolf Lake	420,000

Distribution of Fish.

WALL-EYED PIKE FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
FOREST COUNTY—		
A. G. Nagle, Pelican Lake	Pelican Lake	560,000
GRANT COUNTY—		
G. W. Fessel, Muscoda	Inland Lake	140,000
GREEN LAKE COUNTY—		
C. P. Hazletine, Dartford	Green Lake	1,750,000
JEFFERSON COUNTY—		
H. C. Christians, Johnsons Creek ...	Lake Ripley	280,000
	Rock River	280,000
A. L. Lund, Cambridge	Lake Ripley	280,000
V. J. Megowan, Lake Mills	Rock Lake	1,400,000
JUNEAU COUNTY—		
F. E. Hurd, New Lisbon	Lemonweir River and Pond	2,240,000
		420,000
KENOSHA COUNTY—		
F. H. Shennig, Silver Lake	Silver Lake	1,750,000
Robert McKee, Twin Lakes	Twin Lakes	280,000
KEWAUNEE COUNTY—		
John W. Adams, Kewaunee	Seidl's Lake	2,030,000
		280,000
LANGLADE COUNTY—		
V. P. Rath, Bryant	Lawrence Lake	140,000
Thos Wilson, Bryant	Lawrence Lake	140,000
E. S. Koeppenick, Kopenick	High Lake	140,000
	Long Lake	70,000
	Bass Lake	70,000
H. A. Mueller, Polar	Muellers Lake	560,000
		1,120,000
LINCOLN COUNTY—		
E. F. Greyson, Tomahawk	Crystal Lake	420,000
Jas. McBride, Tomahawk	Somo Lake	350,000
		770,000
MANITOWOC COUNTY—		
W. F. Pinnow, Kiel	Sheboygan River	140,000
Fred Schmidt, Rube	English Lake	140,000
		280,000

Distribution of Fish.

WALL-EYED PIKE FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
MARATHON COUNTY—		
Wm. Banch, Wausau	Rib River	280,000
Peter Reis, Wausau	Wisconsin River	280,000
Louis Marchetti, Wausau	Big Rib River	280,000
Henry Selin, Wausau	Wisconsin River	280,000
H. J. Blanchard, Colby	Eupleine River	140,000
H. B. Eder, Colby	South Fork, Popple River	140,000
B. F. McMillan, McMillan	Little Eau Pleine River	280,000
Anton Milanowski, Pike Lake	Pike Lake	140,000
E. A. Rieteger, Marathon	Rib River	280,000
John Scubert, Marathon	Mill Pond on Rib River	280,000
		2,280,000
MARQUETTE COUNTY—		
J. A. Briggs, Briggsville	Lake Mason	420,000
Wm. Ogle, Oxford	Wolf Lake	350,000
M. Fisher, Packwaukee	Buffalo Lake	420,000
		1,190,000
OCONTO COUNTY—		
Wm. Balls, Oconto Falls	Gray Lake	210,000
ONEIDA COUNTY—		
Yawkey Lumber Co., Hazlehurst ...	Lake Katherlene	350,000
OZAUKEE COUNTY—		
Ernest Alten, Thiensville	Milwaukee River	280,000
PORTAGE COUNTY—		
M. S. Murat, Amhehst Jctn.	Lake Emily	700,000
John Een, Amherst	Ricker Lake	210,000
		910,000
PRICE COUNTY—		
Hugh Boyd, Fifield	Pelican Lake	280,000
W. P. Sperry, Phillips	Dantes Lake	210,000
J. A. Andrace, Phillips	Dantes Lake	210,000
C. W. Phelps, Lac du Flambeau ...	Deer Lake	280,000
		980,000
RACINE COUNTY—		
Chas. M. Simonsen, Milwaukee	Waubesee Lake	280,000
Y. P. Thompson, Racine	Root River above the Dam at Horlicksville	280,000

Distribution of Fish.

WALL-EYED PIKE FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
RACINE COUNTY—Con.		
C. B. McCanna, Burlington	Brown's Lake	560,000
Waller and Gettings, Burlington ...	Browns Lake	490,000
J. P. Jentsch, Tischigan	Tischigan Lake	280,000
		1,390,000
RICHLAND COUNTY—		
A. M. Rholik, Viola	White's Lake	140,000
R. P. Clark, Viola	Whites Lake	140,000
J. H. Frazier, Viola	Hulls Lake	140,000
		420,000
ROCK COUNTY—		
Richard Valentine, Janesville	Rock River	280,000
SHAWANO COUNTY—		
H. J. Van Vuren, Seymour	Loon Lake	280,000
M. E. Schneider, Wittenberg	Wilson Lake	140,000
W. G. Helms, Wittenberg	Wilson Lake	140,000
J. G. Brunner, Wittenberg	Wilson Lake	140,000
		700,000
SHEBOYGAN COUNTY—		
Floyd B. Hessler, Glenbeulah	Cedar Lake	350,000
F. L. Carroll, Plymouth	Cedar Lake	420,000
W. H. Peterson, Waldo	Onion River	140,000
J. B. Mertzlg, Random Lake	Lake Twelve	280,000
T. C. Sharpe, Elkhart Lake	Elkhart Lake	280,000
	Cedar Lake	280,000
M. Orth, Jr., Random Lake	Random Lake	280,000
A. A. Meggett, Madison	Sheboygan River	140,000
	Pigeon River	140,000
		2,310,000
TAYLOR COUNTY—		
F. N. Cleveland, Medford	Nigger Lake	280,000
Henry Wesle, Medford	Powell's Lake	140,000
		420,000
VERNON COUNTY—		
H. A. Lombard, La Farge	Kickapoo River Pond	280,000
VILAS COUNTY—		
Salsich and Wilson, Star Lake	Partridge Lake	280,000
D. B. Harvison, Star Lake	Little Muskellunge Lake ..	140,000

*Distribution of Fish.***WALLEYED PIKE FRY PLANTED, 1900—Continued.**

Name and Address of Applicant.	Where Planted.	No. of Fish.
VILAS COUNTY—Con.		
Alex. Blue, Star Lake	Star Lake	140,000
M. H. Barnum, Minocqua	Marion Lake	280,000
	Shisheboygama Lake	280,000
J. J. Meyer, Minocqua	Lampoe Lake	420,000
Bolger Brothers, Minocqua	Bolger Lake	420,000
E. S. Brown, Star Lake	Star Lake	280,000
Ben Gauthier, Lac du Flambeau	Pine Lake	700,000
		2,940,000
WALWORTH COUNTY—		
F. L. Frazier, Lake Beulah	Lake Beulah	1,400,000
Sage and Co., Delavan	Delavan Lake	1,120,000
J. A. Hayes, Elkhorn	Lauderdale Lakes	1,050,000
		3,570,000
WASHINGTON COUNTY—		
P. W. Harns, West Bend	Little Cedar Lake	1,750,000
Julius Hassman, Hartford	Pike Lake	350,000
K. E. Clough, Richfield	Head of Oconomowoc R. .	350,000
John Rosenheimer, Schleisigerville	Big Cedar Lake	700,000
Aug. Koch, Kewaskum	Kewaskum Pond	140,000
M. Wilson, Hartford	Pike Lake	700,000
		3,990,000
WAUKESHA COUNTY—		
J. McD. Randles, Waukesha	Pewaukee Lake	1,400,000
B. Young, Oconomowoc	La Belle Lake	1,750,000
	Oconomowoc Lake	1,750,000
	Silver Lake	1,750,000
	Nashotah Lake	1,750,000
Wm. H. Tuohy, Eagle	Eagle Lake	280,000
J. P. Donlan, Eagle	Lulu Lake	280,000
		8,960,000
WAUPACA COUNTY—		
W. B. Baker, Waupaca	Chain o' Lakes	1,750,000
E. H. Lynch, Crystal Lake	Twin and Crystal Lakes .	210,000
C. L. Perry, Marion	Pigeon River Pond	140,000
A. C. McCord, Oshkosh	Clover-leaf Lakes	560,000
		2,660,000
WINNEBAGO COUNTY—		
John Maag, Oshkosh	Planted in Lake Winne- bago	7,000,000

Distribution of Fish.

WALLEYED PIKE FRY PLANTED, 1900—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WOOD COUNTY—		
Geo. W. Baker, Grand Rapids	Davis Pond	140,000
John Gaynor, Grand Rapids	Wisconsin River	140,000
A. D. Hill, Grand Rapids	Wisconsin River	140,000
Geo. M. Huntington, Grand Rapids .	Wisconsin River	140,000
A. M. Muir, Grand Rapids	South Centralia Pond	140,000
W. C. Martin, Grand Rapids	Wisconsin River	140,000
J. E. Brazeau, Grand Rapids	Wisconsin River	140,000
B. F. Haskins, Centralia	Mill Pond	140,000
W. W. Meade, Grand Rapids	Wisconsin River	140,000
Geo. B. McMillan, Centralia	Wisconsin River	140,000
H. C. Timm, Centralia	Wisconsin River	140,000
W. G. Scott, Centralia	Wisconsin River	140,000
Ben. Hansen, Centralia	Wisconsin River	140,000
T. E. Nash, Nekoosa	Wis. River above the Nekoosa Dam	700,000
		2,520,000
Total distribution, 1900 .....	.....	69,850,000

*Distribution of Fish.***WHITE BASS DISTRIBUTION, 1899.**

Where Planted.	No. of Fish.
La Belle Lake, Waukesha County.....	500
Devils Lake, Sauk County	500
Pike Lake, Washington County	500
Rock Lake, Jefferson County	550
Oconomowoc Lake, Waukesha County.....	500
Okauchee Lake, Waukesha County.....	500
Shawano Lake, Shawano County	550
Delavan Lake, Walworth County	500
Elkhart Lake, Sheboygan County	500
Fisher Lake, Florence County	500
Big Cedar Lake, Washington County.....	500
Green Lake, Green Lake County	650
Powers Lake, Walworth County	625
Okauchee Lake, Waukesha County	500
First Lake, Dane County	500
Minocqua Lake, Vilas County	500
Wolf Lake, Fond du Lac County	700
Lauderdale Lakes, Walworth County.....	500
Silver Lake, Kenosha County.....	650
Lake Beulah, Walworth County	700
Pewaukee Lake, Waukesha County	500
Fox Lake, Dodge County	500
Little Cedar Lake, Washington County.....	650
Tomahawk Lake, Vilas County	625
Eagle Lake, Racine County	500
Pine Lake, Vilas County	600
Spread Eagle Lake, Florence County.....	400
Kelly Lake, Oconto County	400
Total distribution, 1899.....	15,100

Note.— The white bass planted as per above statement were mature fish, ripe for spawning.

*Distribution of Fish.***BLACK BASS DISTRIBUTION, 1899.**

Where Planted.	No. of Fish.
La Belle Lake, Waukesha County	8,600
Delavan Lake, Walworth County	7,825
Brown's Lake, Racine County	7,840
Lake Beulah, Walworth County	2,500
Silver Lake, Kenosha County	5,700
Eagle Lake, Racine County	7,840
Milwaukee River at Cedarburg, Ozau- kee County	3,300
Elkhart Lake, Sheboygan County	5,900
Oconomowoc Lake, Waukesha County	7,300
Lemonweir River at New Lisbon, Juneau County	7,550
Milwaukee River at Milwaukee, Mil- waukee County	4,300
Total distribution, 1899	68,655

DISTRIBUTION OF LAKE TROUT FRY, 1899.

Where Planted.	No. of Fish.
Off from Kenosha	666,000
Off from Port Washington	1,440,000
Off from Sheboygan	720,000
Off from Sturgeon Bay	720,000
Off from Two Rivers	720,000
Off from Racine	360,000
Bass Lake, Bayfield County	60,000
Round Lake, Sawyer County	40,000
Bennett Lake, Douglas County	20,000
Lake Mendota, Dane County	132,000
St. Croix Lake, Douglas County	20,000
Green Lake, Green Lake County	450,000
Chequamegon Bay	11,500,000
Total distribution, 1899	16,848,000

Distribution of Fish.

DISTRIBUTION OF LAKE TROUT FRY, 1900.

Where Planted.	No. of Fish.
Off from Port Washington	2,220,000
Off from Kenosha	1,140,000
Off from Two Rivers	600,000
Off from Racine	1,200,000
Off from Sturgeon Bay	1,200,000
Off from Sheboygan	600,000
Off from Ahnapee	600,000
Lake Mendota, Dane County	600,000
Crawling-stone Lake, Vilas County	37,500
Green Lake, Green Lake County	600,000
Chequamegon Bay	22,000,000
Total distribution, 1900	30,797,500

MISCELLANEOUS DISTRIBUTION, 1899.

	No. of Fish.
Yellow Perch.	
Planted in Brown's Lake, Racine County	5,000

Distribution of Fish.

MISCELLANEOUS DISTRIBUTION, 1900.

	No. of Fish.
Full-Grown Rainbow Trout.	
Planted in Peshtigo River, Marinette County	700
Planted in Nemacogin River, Sawyer County	650
Planted in Ross Lake, Vilas County.....	650
Planted in Nine Spring Creek	1,600
	3,600
Pickereel Fry.	
Planted in Lake Mendota, Dane County	7,000,000
Muskellunge Fry.	
Planted in Tomahawk Lake, Vilas County	100,000

DISTRIBUTION BY HATCHERIES, 1899.

Madison Hatchery.		
Brook trout fry	1,442,000	
Rainbow trout fry	1,070,000	
		2,512,000
Bayfield Hatchery		
Brook trout fry	651,000	
Wall-eyed pike fry	16,520,000	
Lake trout fry	11,772,000	
		28,943,000
Oshkosh Hatchery.		
Lake trout fry	5,076,000	
Wall-eyed pike fry	43,670,000	
		48,746,000

Distribution of Fish.

DISTRIBUTION BY HATCHERIES, 1900.

Madison Hatchery.		
Brook trout fry	1,658,000	
Rainbow trout fry	1,244,000	
		2,902,000
Bayfield Hatchery.		
Brook trout fry	585,000	
Lake trout fry	22,037,500	
Wall-eyed pike fry	3,000,000	
		25,622,500
Oshkosh Hatchery.		
Lake trout fry	8,760,000	
Wall-eyed pike fry	66,850,000	
		75,610,000

SUMMARY OF DISTRIBUTION ALL KINDS, 1899 AND 1900.

	1899.	1900.
Brook trout fry	2,093,000	2,243,000
Rainbow trout fry	1,070,500	1,244,000
Lake trout fry	16,848,000	30,797,500
Wall-eyed pike fry	60,190,000	69,850,000
Black bass, fingerlings	68,655	
White bass, full grown	15,100	
Muskellunge fry		100,000
Pickereel fry		7,000,000
Yellow perch, full grown	5,000	
Rainbow trout, (mature fish)		3,600
Totals	80,290,255	111,238,100

*Distribution of Fish.***MILES TRAVELED BY THE FISH CAR, "BADGER," OVER THE SEVERAL RAILWAY LINES IN WISCONSIN, DURING YEARS, '99 AND '00.**

	1899.	1900.
C. & N. W. Ry.....	7,691	5,561
C. M. & St. P. Ry.	5,088	3,756
C. St. P. M. & O. Ry.....	3,054	5,798
Wis. Central Ry.....	2,083	585
C. B. & Q. Ry.....	643	.....
G. B. & W. Ry.....	138	126
A. & W. Ry.....	204	184
Totals	18,901	16,010

REPORT
OF THE
COMMISSIONER

Appointed by the Legislature in 1899

To Investigate and Report upon the Methods of Procedure in this and Other States and Countries in Giving Instruction in Manual Training and in the Theory and Art of Agriculture in the Public Schools.

L. D. HARVEY, Commissioner.



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1901



LETTER OF TRANSMITTAL.

MADISON, Wis., January 15, 1901.

To His Excellency, ROBERT M. LA FOLLETTE,
Governor of Wisconsin.

SIR:— I have the honor to submit herewith as required by Chapter 121, Laws of 1899, my report as Commissioner, appointed by the legislature "to investigate the methods of procedure in this and other states and countries in giving instruction in manual training and in the theory and art of agriculture in the public schools."

In the discharge of the duties imposed upon me by law, I have made an extended and careful study of what has been attempted in the fields of agricultural instruction and manual training in this and other countries.

Addresses on the subject of instruction in agriculture, its possibilities and advantages, have been given at farmers' institutes and other gatherings of farmers and others interested in the agricultural development of the state, in probably twenty counties.

Through the co-operation of the board of regents of normal schools, at my request, a plan has been inaugurated by which the seven institute conductors from the state normal schools have been assigned for work in twenty-eight of the agricultural counties of the state. Under this plan, each conductor will spend a week in each of four counties visiting the district schools each day, and addressing meetings of farmers each evening. In each of these addresses these men will present the desirability and advantages of instruction in the ele-

ments of agriculture and domestic economy for country boys and girls. Every effort will be made by the conductors, with the co-operation of the county superintendents, to awaken new and larger interest on the part of the people, in the education of the country boys and girls.

During the two years, I have made addresses in many of the cities of the state on the subject of manual training, and an extensive correspondence has been carried on for the purpose of arousing an interest in this subject, and in instruction in agriculture and domestic economy. As a result of these efforts, calls are coming for addresses upon these subjects from so many localities that my entire time could be devoted to this work.

Conferences have been had and correspondence carried on with recognized leaders in the field of agricultural instruction for the purpose of securing their judgments as to ways and means for inaugurating this work in the public schools.

With the hope that the efforts thus far put forth may not be without value, and that some provision may be made for further effort in the same direction, until tangible results are secured, this report is respectfully submitted, I am,

Very respectfully,

Your obedient servant,

L. D. HARVEY,

Commissioner.

REPORT ON INSTRUCTION IN AGRICULTURE IN THE PUBLIC SCHOOLS.

In reporting upon the feasibility of providing instruction in the Elements of Agriculture for rural communities, it is necessary first to consider whether such instruction is desirable. To determine this it is necessary to make a brief survey of existing conditions, both in the country and city.

I believe it will be conceded by all, that the purpose for which the public school system is organized and maintained, is the training for good citizenship. One of the first essentials of good citizenship is, that the individual shall be so trained as to be not only a self-supporting member of society, but so that he may be able to support those dependent upon him. An education which does not keep this end in view, is of but little value, and it is doubtful whether there can be any justification for support by public taxation of a system of education which ignores this element.

This does not mean that it is the function of the public school system to fit individuals for the immediate practice of whatever vocation they may decide to enter. While public interests may justify special lines of training for particular fields of activity, there must necessarily be a limit beyond which public education cannot wisely go in this direction. It is a recognized fact that the environment in which children are reared is, generally speaking, the one in which they are likely to continue in later years. We do not expect that the city-bred children, educated in city schools, will to any large extent find their future occupations in the country. And while it is true that there is a larger movement from the country to the city than from the city to the

country, it is still true that the majority of those reared upon the farm, will likely continue their activities in later life under conditions which obtain in the country.

I take it that it will be conceded that in the city schools an effort should be made to awaken an intelligent interest on the part of the children there being trained, in their immediate environment—not that their interests shall be confined wholly to the conditions of city life—but since they are likely to remain in the city, the necessity for the development of such an interest as will make the success of their life work more probable, seems evident.

The relations between country and city are becoming more close year by year, and it will therefore be clear that the city boy and girl will be more likely to succeed in the environment of the city, if they know something of and have some interest in the conditions which surround and control the activities of country life; but it will always remain true that their largest interests are concerned with the things immediately about them.

It is equally true that the education which the country boy and girl are to receive, should put them in touch with their environment, and should awaken an intelligent interest in the things immediately about them, and make clear to them the possibilities for intellectual activity and development for the individual who lives in the country. It should make clear to them the necessity for something more than hard physical labor for success upon the farm. It should make evident to them that a trained intelligence brought to bear upon the problems of farm life is a necessity for the highest success, and that when so brought to bear, if coupled with industry and economy, will produce financial returns coming to but a small proportion of those who find their life work in the cities.

If these premises are correct, then it follows, that the country boy and girl should have opportunities in the schools open to them and which they are able to attend, for securing a more intimate knowledge of the things with which they are likely to be concerned in after life, than is now afforded. They have a right not only to this knowledge, but to the kind of training necessarily re-

quired in securing it. It is important, to them also, that through this knowledge and training there shall come the development of a new set of interests, which under present conditions rarely exist.

To say that the country boys and girls, 98 per cent. of whom secure in the district schools all the education which they receive in any school, should be compelled to enter upon their life work with little or no knowledge of the myriad forms of plant and animal life about them, of the quality and composition of the soil from which they are to secure their livelihood, with no appreciation of the fact that successful agriculture demands the application of a wider range of scientific principles than any other vocation, with no knowledge of the facts and principles of science applicable to agriculture and with no interest in them, with no appreciation of the fact that modern industrial development with its improved means of transportation and communication, makes the problem of competition as vital a one for the farmer as for the merchant or the manufacturer, is to rob them of the very things which are essential to success in their life work, as measured not only from a financial standpoint, but from the standpoint of the development of the individual.

No one who knows anything of the teaching in the country schools, will contend, for a moment, that they are at present doing these things for their pupils. No one who knows the facts as to the age at which a majority of the pupils leave even the district schools to begin work, will claim that all that ought to be done for them can possibly be done under existing conditions in those schools. This is true, because the comprehension of the basic facts and scientific principles which it is necessary to know and apply in successful farming, cannot be secured at the early age at which most pupils leave these schools. Whatever might be done for them in the way of study of the things about them to quicken their intelligence and awaken their interests, is done to-day in very few schools. The only opportunity afforded the country boy in Wisconsin to secure any working knowledge of the scientific basis of agriculture, is that given in the agricultural department of the State University. That department is doing a

grand work, not only for the development of the young men who attend it, but for the material development of the entire state. At the present time, crowded as it is beyond its capacity to adequately care for those who are in attendance, less than five hundred boys from our rural population are securing its advantages. These boys when they go back to the communities from which they came and put into practice what they have learned at the University, show the beneficial results of the kind of training given there. Their influence affects others, and is ever widening. That influence would extend much more rapidly, and improvement in modes of farming would make more rapid strides, if opportunities were afforded for awakening the interest and intelligence of the boys in every farming community in the state, in matters which vitally concern the people of these communities. The high schools which exist in the cities and villages offer but few opportunities for the country boy and girl to secure the kind of training which would be most valuable for them if they are to remain upon the farm. They will get in these schools a general training, such as comes from the study of books, but the farmer has to deal not with books alone, but chiefly with things, and the high school does not effectively train its pupils for this form of activity. It becomes evident then, that it is desirable to modify in some considerable degree the work now done in the district schools, by offering in them instruction in the study of nature, or in other words, through training which will develop the power and the habit of close observation of the things about them, an interest in whatever pertains to rural life, and a tendency to look for the reasons for things. Whatever can be done with pupils of the age of those found in the district schools to cultivate a taste for the study of nature in its various forms, should be done. This should be supplemented by a class of schools to be established in farming communities, which shall undertake to carry on this work beyond the district schools, where it may be easily accessible to the country pupils, and at low cost.

For this modification of work in the district schools, but little can be hoped under existing conditions. It

has been attempted in our own state and in other states and countries, and in every case has proven a dismal failure, except where teachers have been specially trained to do this kind of work. Our Wisconsin teachers do not have this training at the present time. The normal schools are doing something in this direction, but may and ought to do much more. But even then, the results would be meagre in the great mass of the district schools, for most of these schools are taught by teachers who have not had the advantages of normal school training. The teachers' institutes have for two years been undertaking to awaken an interest in this work, and, so far as possible, have offered instruction during the brief time they have been held, which should aid the teachers in carrying it on. Were the funds for these institutes adequate to furnish the full quota of institute work called for from the several counties of the state, much more might be done than it is possible to do at the present time. Even then, the constant change in the teaching force, by which probably not less than two thousand new teachers enter the public schools each year who have not been specially trained, it would be impossible to carry on the work continuously and effectively in a large number of schools. Even under the best conditions possible of realization the extent to which this work may be successfully carried on in the district schools is necessarily limited. If communities would take advantage of the possibilities growing out of the consolidation of schools and transportation of pupils at public expense, by which the children of the entire township could be brought into one central school without any increase of expenditure, it would be possible to secure teachers trained for this work, more regular attendance, and therefore, better results. Even then much would remain to be done. The class of schools I have already suggested, which should offer in each agricultural county an opportunity for the pupils after completing the district schools to carry on this work nearer their own homes, where they can attend without any large expense, is needed, if our public school system is to adequately do the work of training for citizenship demanded by modern conditions.

Elementary and secondary instruction in agriculture is something comparatively unknown in this country. To show that it is not an untried experiment, and to give an idea of what is being accomplished elsewhere, the following statement of what is being done in foreign countries is presented.

Acknowledgments are made to Prof. F. W. Woll, Assistant Professor of Agricultural Chemistry, University of Wisconsin, and to A. C. True, Ph. D., Director of the Office of Experiment Stations, U.S. Department of Agriculture, for valuable information concerning the status of Agricultural Education in the Scandinavian countries, Finland, and Belgium.

DEVELOPMENT OF AGRICULTURAL INSTRUCTION IN OTHER COUNTRIES.

THE SCANDINAVIAN COUNTRIES.

Norway, with a population of two million, had in 1896 forty-two institutions for agricultural instruction, research, or control. Sweden, with a population of less than five million, had eighty-six such institutions. Denmark, with a population of less than two and a quarter millions, and an area of 15,289 square miles, has twenty-eight such institutions. Finland, with a population of less than two and a half millions, and an area of 144,255 square miles, had 49 such institutions. These institutions in the four countries, were classified as follows :

Agricultural colleges	5
Agricultural intermediate schools.....	2
Agricultural elementary schools	87
Dairy schools.....	46
Horticultural schools.....	10
Forestry schools.....	5
Farriery schools.....	4
Chemical control stations.....	11
Milk control stations	3
Seed control stations	25
Experiment stations.....	7

The four countries have on an average, an agricultural school for about every 58,000 of the rural population, and a control or experiment station for every 220,000

of the rural population. In order to reach a similar ratio in Wisconsin, there would have to be thirty-four agricultural schools, and nine experiment stations.

The institutions for furnishing instruction in agriculture in the Scandinavian countries are of two classes, those designed to give elementary instruction, and those for advanced instruction. The schools offering elementary instruction in agriculture are located in different parts of each of the countries, and are supported largely, though seldom wholly, by state aid, the districts in which the schools are located paying the remaining portion of the expense. In Norway the state pays on an average three-fourths of the expenses for the support of these elementary schools, while in the other Scandinavian countries the appropriations are of definite sums. In all these countries the institutions offering the advanced instruction in agricultural branches are supported wholly by the respective states. The difference between these two classes of schools may be briefly stated as follows: The elementary schools provide both practical and theoretical instruction, except in one class of Swedish schools, while the higher agricultural schools are essentially theoretical, previous experience in ordinary farm work being required of students.

As the state university already provides facilities for advanced work, it will be unnecessary to consider, in this report, the plan of organization and character of work in the higher institutions.

In each of the four countries named, the elementary agricultural schools have practically the same basis of organization. In all of them the instruction given is built upon the common school education. The aim as stated is "to impart fundamental knowledge in agricultural branches to future farmers." To be admitted as a pupil in most of these schools, the candidate must be eighteen years of age, must produce a doctor's certificate that he is strong, without bodily defects, and free from contagious disease. He must also present a certificate of character from his pastor. He must be able to write with a fair degree of correctness, from dictation, be efficient in the elementary work in arithmetic, and have a fair knowledge of the geography and history

of his country. At least one year's practice in ordinary farm work is required as an essential for admission, and an application, written by the candidate himself, must be sent to the director of the school. The candidates must finally pass an entrance examination in composition, arithmetic, geography, and history, before being admitted as pupils. Preference is given to applicants living in the district where the school is located, and to eldest sons having allodial rights, who therefore may be counted on settling as farmers in the district. The number of applicants for entrance to these schools greatly exceed the number that can be accommodated, so that only those who are well qualified for the work, and who intend to become farmers in the district in which the school is located, are, as a rule, likely to be admitted.

The schools are located in the country on farms belonging to the respective districts (counties), and operated at their expense supplemented by state aid.

The farms vary in size from one hundred to two hundred acres, or more. They are generally well equipped with buildings, farm machinery, library, instructional apparatus, improved stock, etc. The director must be a practical farmer. He usually holds a diploma from one of the agricultural colleges, and often he has continued his studies abroad, along special lines, after graduation. It is required of him to conduct the farm so that it forms a good object lesson and a model, both for the pupils themselves and for the farmers in the surrounding district. The number of teachers at these schools in addition to the director, varies somewhat, according to the development and conditions of agriculture in the various districts. There is generally a second teacher, who is the assistant to the director, and also teachers in horticulture, forestry, and dairying. The latter are experts in their particular lines, and teach only these branches, while the general fundamental branches are taught by the director and his assistant. The course of instruction offered in these schools, is partly theoretical and partly practical, and lasts from one and a half to two years. The practical instruction occupies three hours a day, and covers the following preparatory studies: Composition, practical arithmetic,

plane geometry, chemistry and physics. The basal studies taught are agriculture (including mineralogy, geology, botany, and physiology), animal husbandry (including dairying), forestry, horticulture, book-keeping, and farm accounts. Practical exercises are given in surveying, map drawing, farm machinery, and farm buildings, drainage, forestry, horticulture, blacksmithing, and carpentry, and geological and botanical excursions. Practical work in the field or barn occupies the full time of the students during the summer, when they take part in the regular farm work under the supervision of the director or the second teacher. Work in blacksmithing and carpentry comes throughout the year, by rotation, one or two students at a time having exercises in these branches each day, or afternoon. The class room instruction consists largely of recitations from text books, and written compositions on the subjects treated are frequently required. At the completion of the full course, the students are subjected to written and verbal examinations, the former in agriculture, animal husbandry, and practical arithmetic, the latter in agriculture and botany, animal husbandry, forestry and horticulture, chemistry and physics, practical arithmetic and geometry. The pupil is marked in each study, and on passing the examination and properly completing the course, receives a diploma from the school, giving in detail his standing in each study, and his average standing, together with the remarks on his industry and behavior during his school life.

SWEDEN.

In Sweden there is a second class of elementary agricultural schools, which are calculated to furnish young men with the theoretical education required for the proper management of the smaller farms. The courses last twenty to twenty-four weeks, beginning on the last week day of October each year. The requirements for admission are somewhat higher than those just stated, and in addition at least one year's experience in ordinary farm work is required. The studies taught in this school are physics and meteorology, chemistry, botany, zoology, geology, agriculture, veterinary science, animal

husbandry, dairying, architecture, geometry and surveying, farm book-keeping, and drawing. The total number of hours of instruction during the course varies from 595 to 1,001 at the different schools, or an average of four to seven hours a day. For all the schools of this class the average number of hours of instruction in a given year is 825, equivalent to six hours daily. The state pays one-half the expense of maintaining these schools, the other half being borne by the county in which the school is located. The plan of instruction is under the control of the state. There are at present fourteen agricultural schools of this class in operation in Sweden.

DENMARK.

Denmark has seventeen elementary agricultural schools, all supported in part by the state. The growth of interest in agricultural instruction in Denmark during the latter half of the century as compared with the lack of interest during the earlier part of the century, is shown by the fact that the first school of this kind was opened in Denmark in the year 1800. This, so far as is known, was the first agricultural school ever organized in the world. The school was founded through the generosity of a Danish Major General, J. F. Classen. His will contained the clause providing for the establishment of a seminary or agricultural institute for the benefit of "good subjects of the farming class" where fundamental agricultural principles were to be taught during a course of from three to four years. The scholars were to have free rooms and board, and also necessary wearing apparel. They were to be elected from the different parts of the country on recommendation of the county magistrates. The agricultural society was asked to select a person who should fit himself for the professorship of agriculture in this school through three years of travel in foreign countries. In 1793 a Mr. Olufsen was elected to the position, and he traveled through most of the European countries during the following years. On his return to Denmark, he at once proceeded in conjunction with the board of regents of the school and the state agricultural society, to carefully plan, build, and equip the school at Nasgaard, located in a beautiful re-

gion peculiarly well adapted for the purpose in view. Only one pupil presented himself, however, and the opening of the school was postponed. "The farmers did not believe that anything could be gained by going to a school to learn how to run a farm." The school was not opened permanently until 1849, nearly fifty years having elapsed before sufficient interest in the subject had been aroused in Denmark to furnish enough students to warrant the opening of the school. Since that time the school has been in operation, and at the present time twenty-five educational institutions, devoted to instruction in agriculture, and three stations are being carried on. It is stated that in these schools the number of young farmers who have received instruction considerably exceeds ten thousand. This is a remarkable showing considering the fact that the total population of the country is a little more than two million people.

FINLAND.

Finland has two so-called intermediate agricultural schools of a somewhat higher grade than those already described. In these schools two different courses in agriculture are offered, one lasting two years, and the other one year. A dairy course is also given. The instruction offered is both theoretical and practical. The following number of hours are given to the various studies in the two years' course:

First year—Natural history, 122; arithmetic, 153; composition, 259; total, 534.

Second year—Natural history, 30; arithmetic, 86; composition, 57; agriculture, 134; animal husbandry, 50; veterinary science, 65; farriering, 9; drawing, 40; forestry, 30; surveying, 65; agricultural law, 18; farm book-keeping, 76; total, 660. In addition the students take part in all practical work on the farm, in the field, barn, and stable, composting manure, threshing, tile draining, grubbing, gardening, harvesting ice, road repairing, forestry work, etc. The students are in general graduates of the Finnish common schools or high schools. In one of the two intermediate agricultural schools, a theoretical winter course running through two sessions is required. The plan of instruction given

is more along theoretical lines, and is more advanced than that followed in the elementary agricultural schools.

There are twenty-two elementary agricultural schools in operation in Finland. The state assists in the maintenance of each of these schools. Even with this number of schools organized, the facilities are not yet ample to provide instruction for all seeking it.

A comparison of the courses offered in these schools with the short courses offered in the agricultural department of our state university, shows that in many respects the work is similar. In those countries many of the students in the higher agricultural schools have had their preliminary training in these elementary schools of agriculture.

AGRICULTURAL INSTRUCTION IN IRELAND.

From the report of the Parliamentary Commission on Manual and Practical Instruction in Primary Schools in Ireland, submitted to parliament in 1898, it appears that the commissioners of national education for Ireland, in their report for 1837, expressed an intention of providing for instruction in those branches of science which have a practical application of husbandry and handicraft. The Commission found, however, at the time of its report, that the branches of science "having a practical application to husbandry do not hold so prominent a place in the school curriculum as the report of 1837 would lead them to expect, while practical farming, so far at least as such a subject could be taught from the text book, is one of the chief branches of instruction." Under the rules of the commissioners of national education, agriculture is a compulsory subject for boys of the fourth and higher classes in all rural schools, and is optional for girls. Even in town schools, the subject may be taught to boys and girls. In 1896 the number of pupils examined in this subject was 85,773, of which 56,478 passed. The amount of government aid given directly for this work, was about \$65,000 in that year. The following is taken from the report of the commission:

"The program laid down by the Commissioners of National Education consists of various chapters of a

text book entitled 'Introduction to practical farming,' which deals with such subjects as the following: Cultivation of land; manures; live stock; dairying; gardening; agricultural instruments; land drainage and reclamation; farm fences; etc. The subject was taught in the national schools as a rule entirely from this text book, and was unaccompanied by any practical illustrations, a knowledge of the text book alone being required by the rules of the commissioners."

"The evidence we have received throughout Ireland goes to show that the subject so taught is of little educational value. The children do not get any real grasp of the subject, as no efforts need be made to give them a practical acquaintance with the objects and processes described in the lessons. For example, Dr. T. J. Alexander, Head Inspector of National Schools in Cork, states that the present book teaching is worthless. Mr. Purser, another Head Inspector, expresses the same opinion. Lord Monteagle, who is much interested in agricultural education, is of opinion that the present teaching out of a book is wholly useless if not worse. Similar evidence was given by many other competent witnesses. This opinion is quite in accordance with the evidence we received in England. Mr. John Chalmers, Head Master of Burton School, Westmoreland, stated that he would not think anything of the teaching of agriculture merely out of books. Another witness, Mr. C. Courtenay Hodgson, Organizing Secretary to the Cumberland County Council, was of the opinion that theoretical instruction without work by the pupils on an experimental plot, was quite valueless. Mr. T. G. Rooper, one of Her Majesty's Inspectors of Schools in England, declared that he would never encourage the teaching of agriculture merely from books." The following are some of the recommendations of the commission:

"We are strongly of opinion that even if the instruction were more efficiently given, the subject of practical farming forms no fitting part of the program of a primary school. The attempt to teach the details of the art of agriculture to children of school age can be of little profit. As regards the scientific aspect of agriculture on the other hand, some preliminary train-

ing in the simplest elements of natural and physical science is absolutely necessary for a proper appreciation of the bearing of scientific principles to the practice of farming. While, therefore, we fully recognize the great importance, especially as regards Ireland, of instruction in practical farming, we consider that this should be given only in special schools of a technical character."

"We are consequently of opinion that the course in agriculture at present prescribed for national schools should be altered. The new course should consist of instruction in the elements of the natural and physical sciences that have a direct bearing on agriculture, and this instruction should be given with the aid of experiments of a simple character, performed as far as possible by the pupils themselves. Such a course of instruction will be of a nature entirely within the capacity of the children of a primary school. It will afford a good disciplinary training for all children, even for those who are not to be subsequently engaged in the practice of agriculture, while it will enable those who are to be so engaged at a later stage, to make intelligent use of scientific treatises on the subject."

The course in agriculture thus modified, will naturally constitute the course in elementary science for boys in rural schools.

"In this connection we beg to call attention to the following extract from a publication recently issued by the French government on the 'Teaching of Elementary Ideas of Agriculture in Rural Schools,' which clearly expresses our views on the matter: "

"Instruction in the elementary principles of agriculture, such as can be properly included in the programme of primary schools, ought to be addressed less to the memory than to the intelligence of the children. It should be based on observation of the every-day facts of rural life, and on a system of simple experiments, appropriate to the resources of the school, and calculated to bring out clearly the fundamental scientific principles underlying the most important agricultural operations. Above all, the pupils of a rural school should be taught the reasons for these operations, and the explanations for the phenomena which accompany them, but *not* the details of methods of execution, still less a *resume* of maxims, definitions or agricultural precepts. To know the essential conditions of the growth of cultivated plants, to understand the reasons for the work of ordinary cultivation, and for the rules of health for man and domestic animals—such are matters which should first be taught to everyone who is to live by tilling the soil; and this can be done only by the experimental method.

"The master whose teaching of agriculture consists only in making the

pupils study and repeat an agricultural manual, is on the wrong path, however well designed the manual may be. It is necessary to rely on very simple experiments, and especially on observation.

"As a matter of fact, it is only by putting before the children's eyes the phenomena to be observed, that they can be taught to observe, and that the principles which underlie the science of modern agriculture, can be instilled into their minds. It should be remembered that this can be done for the rural agriculturist only at school, where it will never be necessary to teach him the details which his father knows better than the teacher, and which he will be certain to learn from his own practical experience.

"The work of the elementary school should be confined to preparing the child for an intelligent apprenticeship to the trade by which he is to live, to giving him a taste for his future occupation; with this in view, the teacher should never forget that the best way to make a workman like his work, is to make him understand it."

In Ireland there were in '98, forty-seven national schools having farms attached, varying in area from one and a half to forty-eight acres, in which instruction was given not only in the theory but in the art of practical agriculture. These farms are technically known as school farms. There were also eighty-two national schools having gardens attached, usually less than one acre in extent, in which instruction was given in cottage gardening, poultry management, etc. These are known as school gardens. The Commission recommended that in order to give teachers facilities for experimental teaching, school gardens, each of which need not contain more than one-quarter of an acre, should be provided where possible in connection with rural schools. They state: "These gardens if well and tastefully kept, would have a refining and elevating influence on the children, and would thus indirectly tend to improve the surroundings of their own homes. Even where land is not available for school gardens, the teacher should endeavor by simple experiments in the school room, to illustrate natural processes, such as the germination of seeds, the effect of manures, etc., and should utilize any opportunity afforded by the locality to exemplify the practical applications of scientific principles."

ELEMENTARY AGRICULTURAL INSTRUCTION IN FRANCE.

In 1887 a decree was issued by the French government, making provision for instruction in the elements of agriculture in the primary schools in France. The scheme was somewhat like that outlined for Irish schools, namely, a series of lessons from a text book

dealing with methods of cultivation of the important crops, gardening, and a few notions about the care of live stock, soils, manures, drainage and common agricultural instruments. In France as in Ireland this scheme proved unsatisfactory, and in about 1897 the plan was abandoned and a new scheme inaugurated. The new scheme limits agricultural teaching in elementary schools to giving the pupils instruction in scientific notions that underlie the principles and practices of agriculture, with reference to conditions under which the crops grown are best developed, the reasons for the principal operations of cultivation, and the laws of growth of man and the domestic animals. These notions are to be taught by means of object lessons, and by experiments. Actual methods of cultivation are not to be taught, because (1) the children of country schools (who seldom frequent the school after twelve years of age) are too young to learn them, and (2), the teachers can not be expected to be complete masters of the art and practice of agriculture. It is desired that all scientific teaching in country schools should have an agricultural bearing, and that it should as far as possible be accompanied by experiments on the part of the teacher from the very first. In this plan, the nature of these experiments is two-fold: 1. Physical experiments illustrating elementary scientific notions such as the three states of matter, properties (e. g., density, volume) of air, nature of oxygen, nitrogen, and carbonic acid gas, effect of these gases on life and vegetation, force of gravity, a few of the commoner phenomena produced by heat and light (e. g., combustion, expansion, reflection, etc.); germination of plants, and their economy."

2. "Experiments by cultivation in flower pots or in assigned portion of school garden. These experiments have for objects the demonstration of the different growth of plants according to their conditions as regards manures, modes of tillage, etc. The first kind of experiments is generally carried on during the winter months, the others in the spring and summer. Pupils of the intermediate and higher classes assist at and take part in them."

In connection with the French rural schools there are school gardens, and experimental plots. The

school garden is the private property of the teacher, and used by him for his sole profit and advantage. If it is used in teaching agriculture, it is because it happens to be the most convenient place for that purpose. The experimental plot is on the contrary, public property, and is used for demonstrating some important fact in plant growth or for making some interesting experiments useful either to children or adults.

While nearly every rural school has a school garden, not four per cent. of them have an experimental plot, and yet it is fully recognized by the leading authorities that until every school has such a plot, much lower scientific teaching on the value and correct use of manure, and on the selection of the best varieties of the different crops grown in the locality can not be expected. What stands most in the way of obtaining these plots is the fact that the rural communes who have to pay the rent for them, not rightly appreciating their utility, do not care to incur the expense, but an effort is being made to point out the necessity of supplying them. These plots are usually small in extent, generally not exceeding a quarter of an acre. The foregoing relates to work in what is known as the primary schools of France, corresponding to our district schools.

The next higher class of schools is called the higher primary. I give here the program of theoretical agriculture and horticulture in this class of schools. These schools are adapted to pupils from thirteen to sixteen years of age, who have completed the work in the primary schools.

AGRICULTURE.

First Year.—Soil—Sub-soil.—Modifications in view of cultivation, instruments of tillage, different operations of cultivation.

Study of plants from an agricultural point of view. Natural agents of vegetation.

Domestic Animals.—Useful and injurious insects.

Garden Instruments.—Principal operations of horticulture.

Second and Third Year.—Soil and water, drainage and irrigation.

Operation and instruments of large cultivation.

Cultivation peculiar to the district.

Natural and artificial meadows.—Vine growth.

Large and small cattle, poultry-yard, rearing of bees.

Gardening.—Vegetable and fruit gardens, works and products.

Notions of the growing of trees.

Agricultural economy.

Agricultural bookkeeping.

PRACTICAL AGRICULTURE AND HORTICULTURE.

First Year.—The pupils are employed as helpers in the work of the other years.

Second and Third Years.—*Spring and Summer Work.*—Principal operations of gardening, demonstrative cultivation, grafting, comparative experiments in cultivations; plants of different varieties with the same manure, same plants with different manure, experimental squares and plots. Cultivations peculiar to the region.

Winter Work.—Preparation of products used in agriculture; lime in its different forms, salts of copper, etc.; mixing lime and sulphur with seed corn, etc.; experimental study of the elements of a piece of earth, of vegetable mould, of a cinder, and of the principal manures (these experiments will be simply qualitative.)

Work has been begun looking toward the preparation of teachers for the carrying out of these experiments through the introduction of the system into the eighty-five male training colleges in France where opportunities are offered for teachers to prepare themselves for this work. Teachers have also been invited to discuss the subject in all the teachers' conferences held for discussion of methods of teaching.

The former able Director General of French Agriculture, Monsieur Tiessierand, says, "the aim and object of France has been not only to give to children and young people, the means of acquiring knowledge, but also to establish means for *interesting old cultivators*. In this century of extreme competition we must admit that the agriculturist can only thrive if, in working the soil, he adopts scientific methods. Old routine is no longer sufficient in this branch, as it is proved to be insufficient in manufacture."

From statistics of 1893, it appears that during that year instruction was given in France to 3,600 pupil teachers, thirty agricultural laboratories throughout the country furnished analyses of soils and manures, for the help of cultivators, and 3,362 trial farms were established, where farmers could profit by experiment suitable to their own districts. At that time the special farm schools numbered 16; practical schools of agriculture, 39; national schools of agriculture and horticulture, 6; three veterinary schools, and one each bearing the name of National Agronomic Institute, is a Shepherd school, a Cheese, and a Silkworm school. In the universities there were 160 departments and chairs

of agriculture for students of profoundest research. All this cost the department alone over 4,504,050 francs per annum.

AGRICULTURAL INSTRUCTION IN SWITZERLAND.

No work in this subject is done in the primary schools of Switzerland. There is, however, a class of secondary rural schools to which pupils go after completing the work of the primary school, and where special attention is given to the teaching of agriculture. The program of studies in this class of schools for boys is as follows:

- (1) French.
- (2) German.
- (3) Arithmetic.
- (4) Geometry.
- (5) Physical natural science.
- (6) Geography and history.
- (7) Drawing.
- (8) Special courses of agriculture and manual work.
- (9) Gymnastics, and
- (10) Singing.

That for girls is the same, except that we find domestic economy, cutting out, dress making, and ironing, in place of agriculture and gymnastics. These courses last from nineteen to twenty-two hours a week, those for the boys being held in the morning from 7 to 11:30 or 12, and those for the girls from 1 to 5 or 5:30 P. M. These schools are built and furnished by two or more communes united for the purpose. The canton pays the teachers and the special professors, and supplies the materials necessary for the daily work of the pupils.

In these schools the subject of agriculture is divided into the following parts, each of which is taught by a specialist in the subject, who, however, does not confine his work to one school, but who goes round from one to another of the schools in his canton. His visits are determined at the beginning of the year by the educational department of the state, and the days on which he is to visit that particular school are set forth on a printed time table, which is sent to each of the schools

at the beginning of the year. The following are the subjects taught, programs prescribed, and number of lessons per annum.

1. *Arboriculture*.—Choice of the best varieties of fruit to cultivate. Plantation of trees, and care to be given to the orchard. Different kinds of grafting; budding, pruning, and training (10 lessons).

2. *Market Gardening*.—Cultivation of the principal vegetables and choice of the most remunerative varieties. Growth of beans, both haricot and French. The cultivation of the strawberry plant; choice of the best varieties for transportation and for the market. The Tomato. Rhubarb. Potatoes, quick, early, etc. Garden Practice. Sowing; planting of vegetables (6 lessons).

3. *Vine Culture*.—Unnecessary to give details.

4. *Rearing of Cattle*.—Improvement of the race of domestic animals. Rearing; Feeding. Study of the "points" of horned cattle as to the indications they give of the value of these cattle (with practical demonstrations). First care to be given to domestic animals in case of sickness (with practical demonstrations, 5 lessons).

5. *Rearing of Bees*.—Conditions essential for a good wintering. Work to be done during the winter. First visit of the year; the most favorable moment. Series of work to be done up to and at the time of collecting the honey. Practical exercises (4 lessons).

These courses are not only for the pupils of the secondary rural schools, but also for young persons of both sexes of more than 15 years of age who have completed the sixth course of the primary school.

To enable the program to be usefully carried out there is attached to each of these schools an experimental plot. These plots are usually small, but the pupils are allowed to work in the school garden also, and have thus a fairly wide scope for experiments and observation. In the school garden they can also see the result of experiments undertaken in previous years by their predecessors. The following is from the report of a visitor to one of these schools: "At Bernex I saw in operation an interesting and useful practice. Each pupil when he goes to school is allowed to plant 10 or 12 young fruit trees of different kinds, and to graft others if necessary. These they watch and attend for the two years they remain at the school; when leaving the school they are allowed to dig them up and bring them home and plant them in their father's garden. In this way the Genevese, who are at present giving much attention to the improvement of fruit trees, hope after a short time to spread both good trees and the knowledge of the right way of caring for them throughout the country. The head master informed me that the boys take special interest in the result of their own labours, and are quite proud when they have been successful in grafting a plant or in any other operation, with the result that even those otherwise indifferent about their work begin to bestir themselves, not only at practical work, but also at their other studies.

* * * The education given in these schools is well calculated to open the minds of the peasant and the farmer to everything that could interest them in their daily life, making them see beauty where otherwise they might see nothing; training them while still young to perform the daily labours of rural life with interest and intelligence, and thus begetting in them a love for country life, which bodes well for the future prosperity of their native land. What we have to recognize is that the town, with all its attractive appearance and outward show, is daily drawing, in every country in Europe, the peasant from the field, the cultivator from the farm, and is in so far diminishing the native production of the country by draining it of its workers. How to stop this drain is, in France and Switzerland as well as here, the question of the hour; and have we

not in these rural schools the best solution of the question yet offered? These schools are for the many, not for the few; for the young, not for the old; and they are to be found within easy reach (2½ miles in Geneva) of every pupil, and thus satisfy all reasonable requirements."

AGRICULTURAL INSTRUCTION IN BELGIUM.

The teaching of agriculture has been obligatory in rural schools in Belgium for the last fifteen years. For the town schools a program in Notions of Natural Science has been drawn up to correspond to the agricultural teaching in the country, but it is not obligatory. As a rule, however, most city schools have the subject in their course, and the number of boys' schools that teach neither science nor agriculture is small.

The system of agricultural education adopted in Belgium in 1890 provided for primary, secondary, and superior schools or courses of agriculture. Primary agricultural courses for adult farmers are conducted under the direction of the master of agriculture, while courses of a similar grade for teachers and children are supervised by the minister of public education. The secondary and superior schools of agriculture, as well as other agencies for promoting agricultural education and research, are directed by the minister of agriculture. To provide competent teachers for carrying on this work in the primary schools, the course of the normal schools has been organized so as to give regular attention to agriculture, and in order that the teachers already in the primary schools may be fitted to conduct the newly established courses of agriculture, special normal schools on these subjects are provided, during the vacation season. Agriculture in the primary schools consists of two lessons a week which are given in accordance with a plan outlined by the government, and financial and other encouragement is given to those teachers who excel in such instruction. Thus far there has been considerable difficulty in securing teachers having the right equipment of knowledge and teaching ability for this kind of work. For this reason the success of these primary courses of agricultural instruction has been quite varied in the different places, and the matter can hardly be said to have passed beyond the experimental stage. Three of the secondary schools of agriculture are already organized. One of these is devoted entirely to agriculture, while two give instruction both in agriculture and horticulture. The oldest of these insti-

tutions is the one at Ghent, having been founded in 1855. It is thoroughly equipped with facilities for practical and theoretical instruction. Candidates for admission must ordinarily be at least sixteen years old, and pass an examination in the French or Flemish language, natural history, geography, and arithmetic. They must also give satisfactory proof that they are physically able to regularly carry on the practical work required in connection with their studies. The regular course occupies three years, and includes instruction in French, Flemish, German, and English languages, arithmetic, book-keeping, geometry, geography, botany, elementary physics, and chemistry, drawing, agriculture, engineering, animal physiology, and production, and the theory and practice of agriculture and horticulture. Special attention is given to horticulture, which is a very important industry in Ghent, as well as elsewhere in Belgium. In schools of this grade the effort is made to train young men for the practical pursuit of agriculture or horticulture on a relatively large scale. It is expected that they will become managers of estates or foremen in horticultural establishments.

Secondary instruction in agriculture and horticulture is also provided for in a number of private schools, which are organized with reference to instruction in these lines in return for small subsidies. Twenty of these private schools of agriculture are now in operation in Belgium, and are so located as to meet the needs of the different agricultural regions. Provision is also made by the government for short courses in agriculture in public and private secondary schools for general education. These courses consist of at least one lesson a week during the school year, which must be given in accordance with the plan laid down by the government. Thirty schools in Belgium are at present giving such courses. This plan has the advantage of providing at least an outline of the theory and practice of agriculture at small expense to a considerable number of students, who are at the same time, acquiring an ordinary high school education. Such a course awakens their interest in the more scientific and advanced ideas regarding agriculture, and prepares them to read with intelligence the reports of agricultural in-

vestigations. It also tends to make them more contented with rural life. A school for the theoretical and practical instruction of young women in agriculture, including dairying, kitchen gardening, domestic economy, etc., has been established in each of the provinces of Belgium.

LECTURE COURSES FOR ADULT FARMERS.

To meet the needs of adult farmers who can not attend schools, numerous lecture courses on agricultural topics have been organized. Each year some 250 courses of 15 lectures each on questions of general interest to farmers are given in the different rural districts of Belgium by graduates of the higher agricultural schools or other persons who are thoroughly competent for this kind of work. In an article on agricultural education in Belgium published in 1893, M. DeVuyst, an officer of the Belgium Government whose duty it was to supervise these courses, thus writes regarding them:

"To secure practice in this exceedingly difficult kind of teaching, the persons to give these courses meet together twice a year in each district. At these meetings one of their number presents a typical lecture and the others discuss it. The best lessons in the different courses are printed and distributed. At these meetings the improvements which are most urgently needed by the farmers of the region are also studied.

"This method of organized courses of instruction in agriculture for adults is, we believe, peculiar to Belgium. The results it has produced during four years are quite important. There are in the Kingdom about 2,500 rural communes. Within a few years no locality will have reason to complain it has not enjoyed the advantages of this institution. The courses are attended each year by more than 10,000 farmers. The expense of conducting them amounts to only about \$1 per hearer."

Besides these general courses in agriculture, special courses in orchard management, market gardening, dairying, animal husbandry, horseshoeing, apiculture, etc., are also given, and farmers' meetings of one or two days' duration, corresponding somewhat to our farmers' institutes, are held in different places under the supervision of government officials. In each of the provinces there is a state agriculturist and an assistant agriculturist, whose business it is to hold farmers' meetings, deliver lectures, establish fields of demonstration in which the results of agricultural investigations may be

shown on a practical scale, aid the agricultural societies in their work, collect agricultural statistics, and prepare reports on the agricultural condition of the country.

AGRICULTURAL INSTRUCTION IN RUSSIA.

Russia sustains sixty-eight agricultural schools, containing 3,150 pupils, at a cost of \$403,500, of which sum the government pays \$277,500 and the local societies or the school founders pay \$136,000.

AGRICULTURAL INSTRUCTION IN GERMANY.

The German system is based on the theory that schools and colleges are the only places where theoretical agriculture can be properly taught. Few of the higher educational schools first established were exclusively such. A liberal education could be obtained at most of them without touching the subject of agriculture. Later educators have developed a system which begins by fostering a love for nature in the minds of the pupils in the kindergarten, and patiently develops that love through all the dozen or more grades of schools until it culminates in the polytechnic school or the degree granted by the university. The state maintains three grades of agricultural schools, higher, middle, and lower, and expends something like \$200,000 annually on agricultural education.

In Germany agricultural education has so broadened out as to include training in every technical part of the farmer's work — culture of forests, fruits, flowers, and vines; schools to teach wine, cider and beer making, machine repairing; engine running, barn construction, and surveying; knowledge of poultry, bees, and silk-worm raising; domestic economy, sewing and accounts for farm women — all in addition to the long scientific courses of study and years of practical work on an established farm.

A special feature of agricultural teaching in Germany, is the traveling professor. Former United States Consul Monaghan, now connected with the School of Commerce of the University, speaks thus of him:—"These teachers, supported partly by the state, and by agricultural unions, go from place to place, and lecture on

agricultural and horticultural subjects. Their purpose is to lift up and enoble agricultural life; to afford the farmer the knowledge gleaned by science since he left the school; to impart to him the best methods of selecting soils, fertilizers, cattle, trees, etc.; to teach him how to use his lands to best advantage, to graft, to breed in; to get the best, quickest, and most profitable results. These teachers are skilled scientists, practical workers, not theorists, perfectly familiar with the wants and needs of their districts. Armed with this knowledge, the teacher's usefulness is certain and unlimited. When he speaks his voice is that of one in authority, it is heeded. He is a walking encyclopedia of knowledge, especially of knowledge pertaining to the woods, hills, farms, and fields."

AGRICULTURAL INSTRUCTION IN HOLLAND.

Holland has done little in the way of elementary education in this branch. No success has resulted from attempts to introduce agricultural teaching in the primary schools. In 1897 Holland expended \$350,000 on its agricultural department, most of which was used in maintaining advanced schools.

AGRICULTURAL INSTRUCTION IN SCOTLAND.

In the public schools of Scotland, agricultural science is arranged for as an optional study from the third to the sixth grade, inclusive. In 1895-96, 4,148 pupils passed examinations in the subject, and the cost of this to the state was over \$200,000. In 1896 and '97, of the pupils in the "Evening Continuation Schools" where instruction is given to those who have finished the work in the primary schools, 1,089 persons passed the examination in agriculture, and 115 others in horticulture.

AGRICULTURAL INSTRUCTION IN ENGLAND AND WALES.

Agricultural colleges have been established in both England and Wales, to give advanced instruction in agriculture. In 1898 and '99, grants were made from fifteen colleges and associations for this work, amounting to over \$35,000. Besides this direct government

subsidy to higher education, the state grants to the several counties part of the money raised from the excise ("drink money") for educational purposes, out of which more than \$375,000 were spent by the committees in 1896-'97 in promoting agricultural education. The state recognizes instruction in the principles of agriculture as instruction in elementary science, and through grants to primary and secondary schools and to teachers' colleges, it encourages agricultural education as a technical study. In 1896-'97, 1,023 pupils passed examinations in this subject, and the respective school managements received as grant on their account, a total sum of nearly \$700,000. In 1897 the Royal Commission on "Agricultural Depression in England," declared in its report: "We believe that it is essential for the welfare of agriculture that there should be placed within the reach of every young farmer a sound, general school education, including such a grounding in the elements of sciences bearing upon agriculture — e. g., chemistry, geology, botany, and animal physiology — as will give him an intelligent interest in them and familiarize him in their language."

AGRICULTURAL INSTRUCTION IN CANADA.

In 1872 an effort was made to introduce agricultural instruction into the rural schools in the Province of Ontario. The work proved a complete failure, because of the lack of teachers prepared to give this instruction, and for more than twenty-five years the subject dropped entirely out of sight. Within the last three years, this subject has again come to the front, and at present provision is made for teaching the elements of agriculture in all the rural schools of the Province. The experiment is likely to succeed because teachers in these schools are now required to have, as a qualification for teaching, special training in the elements of agriculture. Similar work is being undertaken in other Canadian provinces. Ample provision is made for higher education in agricultural subjects throughout the Dominion.

AGRICULTURAL INSTRUCTION IN OTHER COUNTRIES.

But little has been attempted in the other countries of the world in the way of elementary instruction in agriculture, but institutions are being opened furnishing facilities for advanced instruction and agricultural research. Such institutions have been organized in Hindustan, in New Zealand, in Queensland, in South Australia, in Victoria, in New South Wales, in Cape Colony, in South Africa, in Uruguay, in Chili, in Egypt, and in Japan.

AGRICULTURAL INSTRUCTION IN THE UNITED STATES.

In addition to the work of the Department of Agriculture, agricultural colleges have been established in most states of the Union. Elementary instruction in agriculture has hardly made a beginning in this country. At the present time an interesting experiment is being carried on in the state of New York, under the auspices of the Agricultural Department of Cornell University, by introducing nature study into the public schools of the state. Nearly \$20,000 appropriated by the state is expended annually in this effort. The plan of work is the most systematic yet attempted in the United States, and will undoubtedly produce practical results in awakening an interest in the possibilities of agricultural life. The one drawback to its complete success is the lack of teachers trained to do the work intelligently and thoroughly.

In Missouri the question of elementary instruction in agriculture is attracting a large amount of attention and the state university at its summer session last year, offered courses of instruction for teachers of rural schools in the elements of agriculture. A large number of teachers were in attendance and evinced a deep interest in the work done. A well organized movement is on foot to make this subject a part of the common school course in that state.

In Illinois and Minnesota the subject is being discussed by educational men, and in the near future it is likely that a definite effort will be made to provide for instruction in this subject in the common schools.

In other states the subject is rapidly coming to the front, and is being discussed in farmers' institutes, and in meetings of those interested in the general subject of agriculture.

I have not attempted in this survey of the field, to present the scope and character of work in the higher educational institutions devoted to agriculture. It appears that in every case the work in this subject has begun with the establishment of this class of institutions, and as interest has developed, and people have come to understand the possibility and necessity of applying scientific principles in the art of agriculture, the demand has come for an extension of the work so as to reach a much larger number through the elementary schools. The experiments in Canada, Ireland, England, and France in carrying this subject into the primary schools, or schools of the same grade as our country district schools, seem to indicate that but little can be done in this direction for two reasons, first, because of the immaturity of the pupils, and second, because of the lack of properly trained teachers. The first objection can not be overcome, the second may be, to a considerable extent. Whatever can be done to overcome this objection through better training of teachers for this work in the normal schools, in county training schools, and in teachers' institutes, should be done. As already indicated, work in this direction has been begun in some of the normal schools, is being carried on in the county training schools, and also in the teachers' institutes. There is every reason to believe that in these three fields the work will be steadily strengthened. A statutory requirement that in order to secure a third grade certificate, teachers should pass a satisfactory examination in the elements of agriculture, after due notice being given, would awaken an interest in this matter on the part of teachers, would enable those in charge of the institutes to secure better results in this subject, and would result in the introduction of the instruction into many of the common schools. To require the teaching of this subject by law in all the district schools of the state, would under existing conditions, in my judgment, be a grave mistake. Public interest must be aroused, a sentiment created, which shall demand this instruction, and

demand the preparation of teachers for giving it. It will then come in a natural way, and in no other way can it be made a success.

Following what has been the historical development of agricultural education in other countries, there can be no question as to the desirability of organizing a distinct class of schools not now existing in this state, designed primarily to fill a gap in the educational facilities offered to the country boys and girls in our present system. These schools should fill the place in our system which the elementary schools of agriculture have so adequately filled in Norway, Sweden, Finland, Denmark, Switzerland, Belgium, and France.

RECOMMENDATIONS.

I recommend that the present law relating to the qualifications of teachers be so amended as to require an examination in the Elements of Agriculture in addition to the other subjects upon which an examination is required for a third grade certificate.

I recommend further, that through legislative action, authority be given to county boards of supervisors to establish and maintain schools to be known as County Schools for Instruction in Agriculture and Domestic Economy, and that state aid be given to these schools when organized and established on a basis to be approved by state authority. The amount of state aid should be at least one-half the sum actually expended for purposes of instruction in such school. While the county should be made the unit as the basis of organization, pupils from other counties should be allowed to enter such schools until their full capacity is reached, on payment of tuition. This school should be open to boys and girls upon completion of the common school course of study in the district schools.

COURSE OF STUDY IN AGRICULTURE AND DOMESTIC ECONOMY FOR THE PROPOSED SCHOOLS.

In a bulletin issued last year from the office of the state superintendent, the question of what might properly be attempted in this class of schools was fully discussed. I quote from that bulletin:

"Without attempting to go into detail, it seems entirely reasonable to assume that instruction may be given profitably in schools of the class just suggested, in the following subjects:

The Soil.

Plant Life.

Animal Life.

Economics of Agriculture.

Manual Training.

Domestic Economy.

In dealing with the first topic, *The Soil*, consideration should be given to its composition, modes of cultivation, fertilization, drainage, effect of rotation of crops upon the soil, means of restoring worn out soil to condition of fertility, and the adaptation of different soils to different classes of products.

Under the second topic, *Plant Life*, there should be a consideration of the various forms of cultivated plants, including a knowledge of best varieties for local cultivation; germination; modes of growth; modes of harvesting, care for after harvesting, effect upon soil; economic values for marketing, for feeding and for fertilization. For the boy who is to be a farmer, or the girl who is to be a farmer's wife, and possibly for any other boy or girl, the botany of the corn plants, the modes of growth of other forms of plant life on the farm, if properly taught, may prove at least of as much value as the study of mosses, or other forms of plant life upon which much time is now spent in the field of botanical instruction. This study would be for him a matter of practical utility, and would give him knowledge that would awaken an interest in the growth of agricultural products, resulting in more intelligent cultivation, better adaptation of crops to soil, and better financial returns.

Treatment of the third topic, *Animal Life*, should provide for a study of the domestic animals grown for pleasure or profit, including a knowledge of breeds and breeding; feeding; judging; care, including the prevention and treatment of the diseases of domestic animals; preparation for marketing either the animals or their products; and such knowledge of animal pests, and of the modes of treatment for the prevention of their rav-

ages, thus far discovered, as would enable the farmer to save many a crop which otherwise might be ruined. Might not such knowledge be so organized and taught as to be of at least as great value, both for knowledge and for training, as the study of the tadpole, the crayfish, and the angle-worm?

In treating the fourth topic, *The Economics of Agriculture*, study should be made of the relations of the farmers to general industrial and commercial organizations, of the economics of farm life, including a practical system of domestic accounting, which would enable him to tell with the same accuracy that the manufacturer tells, the cost of any given product during any given period of time.

Under the fifth topic, *Manual Training*, instruction could profitably be given in wood working, not only for the purposes of hand and eye training, but for the practical knowledge and skill resulting from such training, and which would be of value to him as a farmer. To this might be added elementary instruction in blacksmithing, which would enable him to make any of the simple repairs of tools at home, that otherwise he would be compelled to have done at a distance from his own home, and with considerable expenditure of time and money.

Under the general subject, *Domestic Economy*, instruction could be given in sewing, including dress making and millinery work, which certainly would be of value to the girls who are either to perform these lines of work for themselves, or to supervise that work when done for them by others. It would not only develop skill, but would cultivate the taste, and develop a knowledge of the difficulties incident to such work which would make them more considerate of those who might be in their employ, or under their supervision.

In cooking, a course of instruction might properly be given which should include a knowledge of the constituent elements of food products, and their value for definite purposes, which would enable them to construct for the animal, man, a balanced ration. For all concerned this is perhaps as important as the determination of a balanced ration for the cow or the hog. It should also include a knowledge of invalid cooking,

which would enable them to know what are proper foods for invalids and how to prepare such food. Such a course of training would develop economy and skill in the choice and preparation of food which would not only result in the saving of money, but in the better physical, mental, and moral condition of those fed. To this might be added practical instruction in the different details of housekeeping which would add much to the appearance, pleasure and comfort of the home.

In horticulture and floriculture, instruction might be given which would be of value to both girls and boys in the matter of adornment and beautifying of the home surroundings.

For the work on the soil, on plant life, and animal life, and in cooking, a knowledge of essential scientific principles and their application would be necessary. It would not be necessary, even though it were desirable, to give extended courses in geology, botany, zoology, physics, and chemistry in order to place this instruction on a rational, scientific basis. For the teacher, it would be essential that he decide what is to be taught in any one of these branches, and then to decide what knowledge of science is necessary in order that the desired instruction may be properly given.

It must be apparent that in this report it would be entirely improper to attempt to go into detail as to the precise things which should be taught in each of these subjects. The only question is, do these subjects, taken together, contain a body of knowledge of high utility to the country boy and girl, and which may be taught to them. I have already indicated my belief that these subjects do embrace such a body of knowledge, and that under proper conditions that knowledge may be taught.

WILL THIS BODY OF KNOWLEDGE IF TAUGHT, AND THE TRAINING COMING WITH THE MASTERY OF IT, BE OF GREATER PRACTICAL VALUE TO THESE PUPILS THAN ANY OTHER BODY OF KNOWLEDGE, AND ACCOMPANYING TRAINING WHICH COULD BE GIVEN DURING THE SAME TIME.

This question is one which it seems to me needs but little discussion. It is a body of knowledge which directly concerns these people in their subsequent voca-

tions. It is a kind of knowledge which is essential to-day for success in those vocations. It is a kind of knowledge, both in scope and character, which will rarely be obtained by the individual unless obtained in the school. Is there any other body of knowledge which could be substituted for it, and which would be of higher utility to these people for all the practical purposes of life? If there be such another body of knowledge, I do not know what it is. I am thoroughly convinced that it is not the body of knowledge that these young people now get, even the few of them who complete the work of the secondary schools. Will the effort put forth in acquiring this knowledge result in training as valuable as the training resulting from the acquisition of a body of knowledge of less practical value? I am one of those people who believe that knowledge may be valuable in itself and that its acquisition may furnish the highest kind of training; that the student who spends time anywhere in any grade of school in acquiring knowledge of value only for training, when he might acquire knowledge valuable for other purposes, and equally valuable for training, is wasting his time and energy. A five-dollar gold piece has a certain definite value, but the individual who would accept a five-dollar gold piece when he had his option either to take that or a ten-dollar gold piece, would be a fool. The essence of training is doing. In nearly every one of these lines of work suggested, the student is brought into direct contact with things, is trained to study them and their relations to each other, to himself, and to other things; he would furthermore be constantly employed in dealing with these things, and not with words. He would be required to see something, and to do something at every stage of his work, and the seeing and doing would be guided by thoughtful consideration of means and ends. This training, while it would be general in its scope would, at the same time, be specific in nature as well; as it would develop skill along the lines where skill would be needed in his subsequent work. Do not these conditions furnish the best possible elements, both for the training of the mental and physical activities of the individual?

One of the chief purposes in education should be to develop interests, and one of the very necessary outcomes of such a course of training would be to develop an intelligent interest in the activities incident to rural life.

ADDITIONAL WORK TO BE OFFERED IN THESE COUNTY SCHOOLS.

In addition to the work already suggested, there should be given such instruction in language, mathematics, history, and literature as may be carried on in connection with the other work. Such a school should have in connection with it, a small tract of land, to be used for illustrative and experimental purposes: not the line of experiments which the Agricultural Experiment Station undertakes, but a more simple line, which could be carried on under the direction of the teachers, and which would be of value for observation and training purposes. The length of the course offered in these schools should not be less than two years. Special courses should be offered to meet the needs of the older boys in the county, who may have been out of school for two or three years, but who could attend during the winter months with advantage.

Such a school centrally located in a county, would furnish an opportunity for attendance by residents of the county at a very moderate expense. Many of the pupils could board at their own homes, while others could board themselves, returning home on Friday night to remain over Sunday.

The school would necessarily have to be equipped with such simple laboratory apparatus as would be necessary for the experimental work in science. It would need a well selected library of books on agriculture and domestic economy and should be supplied with the best periodical literature pertaining to those subjects. It could be made a distributing center for the county, of the bulletins sent out from the agricultural colleges, and if effort were made to interest pupils in such of these bulletins as came within the range of their comprehension, they in turn would interest their parents in them. The result would be that where one such bulle-

tin is now read in a community, ten would then be read, and with greater interest and more intelligence. Such a school would also be a center for meetings of farmers for discussion upon agricultural subjects. When a number of such schools were established, professors could be sent out from the agricultural college, going from one to another, remaining a sufficient time at each to give instruction not only to the students, but to farmers who might care to attend, in various subjects which could not be taken up in the school itself. The dairy industry, for instance, would furnish an excellent field for such work. The example of Denmark and Germany furnishes an excellent illustration of the value of such traveling professors.

It is needless to say that for the successful operation of such a school, it would be necessary to secure teachers specially trained for such work, and of the very highest order. The head of the school should be a man acquainted with farm life, trained as a teacher, one who had had experience in teaching, and added to this, a thorough training in the best institutions devoted to agricultural instruction. He must be a man who would command the respect and confidence of the farming community, able to adapt himself to conditions about him; and one who would be able to speak with authority upon all matters of practical and theoretical agriculture. He would need two assistants, a man to take charge of the work in manual training, and a woman to take charge of the work in domestic economy. These three teachers would be able to carry on all the different lines of work in a school of ordinary size. With such a school as this organized in a county, it would be possible through its teaching force, to organize the work in nature study in the district schools. During the summer vacation, these teachers could assist in the teachers' institute to be held in the county, giving instruction in this subject. They could present and give instruction in a plan of work to be carried out in the country schools of the county during the year, and in co-operation with the county superintendent, could meet these teachers at different times during the year, to hear their reports of progress, and of difficulties encountered, and to aid them by suggestion and

instruction. In this way it would be possible to carry the work from the higher school into the lower schools, with successful results.

PRELIMINARY WORK NEEDED.

Should the legislature see fit to authorize the establishment of such schools, a large amount of preliminary work would be necessary before their organization could be successfully completed. At the present time, there are almost no text books adapted to the course of instruction in agriculture outlined for these schools. The body of knowledge to be taught in such schools would have to be selected, put into proper form, and organized, in order to make the work a success. As soon as it became apparent that schools of this class were to find a place in our educational system, men competent to do this work would be found ready to undertake it, but until it becomes evident that there will be a demand for the class of text books necessary for use, few competent men will care to undertake their preparation. To begin the work some provision should be made for at least a tentative preparation and organization of the matter selected for instruction.

Still another line of work would of necessity have to be undertaken, that of awakening an interest on the part of farmers in any given community which would result in a demand upon the county board, for such a school. Its advantages must be explained to them, and made clear, and appreciated, before success can be hoped for.

I believe the foregoing plan is a feasible one, that it will command the support of the people most interested—the farmers, that it will show tangible results early, and that as the system is extended, it will awaken the intelligence of the community where the schools may be, and arouse an interest in the matters pertaining to farm life, which will give us better trained and more successful farmers, as well as better trained men and women and better citizens.

REPORT ON MANUAL TRAINING.

MANUAL TRAINING IN GRADES BELOW THE HIGH SCHOOL.

The growth of public sentiment in favor of making manual training a part of the public school course, in the United States, is shown by the report of the United States Commissioner of Education for the year 1897-'98. That report shows that in 1890 there were 37 cities of 8,000 population and over in whose public schools manual training other than drawing was taught; in 1894 there were 93 cities; in 1896 there were 121 cities, and in 1898 there were 146 cities.

For the same year there were 114 manual or industrial training schools, an increase of 15 over the preceding year. Of the 114 schools, 24 were industrial schools for Indian children. In the 90 manual and industrial training schools, other than Indian schools, there were employed 673 teachers, 384 men and 289 women. In the same schools there were 25,893 pupils, 16,447 boys and 9,446 girls. The total expenditure for manual and industrial training by 86 of the 114 schools reporting was \$655,247. Of this amount \$440,572 was paid teachers, \$93,058 for materials, \$36,508 for tools and repairs, and \$85,109 for incidentals and for items not classified.

No statistics are given showing the expenditure for manual training in the 146 cities which reported this work as being carried on. Of these cities, sixteen report work as being begun in the first grade, and carried on through the eighth grade; four report the work as beginning in the second grade; three in the third; five in the fourth; fourteen in the fifth; fifteen in the sixth; thirty-one in the seventh; eight in the eighth, and in the remainder the work is begun in the high school.

In Wisconsin there were last year nine cities which carried on manual training in the high school. In one of these the work was extended to the eighth grade, and in two, throughout the grades. It thus appears that in Wisconsin but little progress has been made toward the introduction of manual training elsewhere than in the high school.

Correspondence and personal conferences with teachers and members of school boards, and prominent citizens in many of the cities of the state, reveal the fact that at the present time there is a large amount of interest in the subject of manual training. There is a steadily growing belief that if manual training has the educational value claimed for it, it should find a place earlier in the course, and should not be postponed until the high school course, when seven-eighths of the pupils have left the public schools. The fact that manual training has secured its first foothold in the high schools rather than in the lower grades, is no justification for such a condition from an educational standpoint. It was put there for other than educational reasons.

First, because it was easy to incorporate into the high school course the work which had been developed and organized for the pure manual training schools. The problem of manual training in the grades had not been worked out as thoroughly as for pupils in the high school stage.

Second, it was easier to interest the public in a proposition to connect this work with the high school than to make it available for pupils of all grades. The latter proposition seemed to be too large an undertaking for many communities, and especially for those having no experience in this line of work.

Third, it was easier to construct a high school course carrying manual training, than to reorganize the course of instruction in the grades so as to make a place for it.

Fourth, there has been a too prevalent idea that manual training was to be carried on for industrial purposes, rather than for educational purposes, and that therefore it should come at a time when pupils were seeking preparation for commencement in some vocation.

In later years the idea long held by intelligent advocates of manual training, that its value is primarily an

educational one, rather than industrial, has come to be accepted by large numbers of people who have been giving the subject some consideration. It is now generally recognized that its value is twofold, primarily for educational purposes, and secondarily for industrial ends.

THE VALUE AND PLACE OF MANUAL TRAINING FOR EDUCATIONAL PURPOSES.

Members of society may be roughly classed into four groups; those who *think* without doing; those who *do* without thinking; those who *neither* think nor do; and those who *think*, and *do* because of their thinking. The fourth class comprises the productive, constructive, organizing element of society. It is the function of the public schools to produce members of this fourth class. It must be evident to all that for the production of a thinking and doing individual, the two forms of activity should be carried on side by side; the doing growing out of the thinking, the thinking made clear and definite through the doing. The fact so often stated, that the leaders in industrial, commercial, and professional fields of activity come largely from the country, does not prove as is frequently claimed, that the training of the country schools is better than that afforded in the cities, but rather that the necessities of country life have from the earliest period of the child's activity, demanded of him physical action for definite ends, determined by mental activity toward the same end. The mental training afforded by the course of instruction in our public schools, should not be underestimated, even though it be proved that this training has come almost exclusively from a study of books rather than from a judicious combination of the study of books and things. Our error has been that we have too long held the notion that mental development is secured in no other way than through a study of books.

Mental power comes through organized thinking. The mere memorizing of what others have said, or learning about what others have done, is not organized thinking, and gives little or no mental training. Organized thinking comes whenever the individual sets himself a definite task to do; and then determines and

applies the ways and means necessary for the accomplishment of that task. This task may be the solution of a problem in arithmetic, or it may be the construction from pieces of shingle of a water-wheel to be turned by the brook. I believe the latter to be of the higher value because it demands the use of tools and material. The tools cannot be used successfully upon the material to produce the desired result, without the exercise of the closest attention and of the judgment in their use. There can be no training of the hand which does not involve mental activity, and the mental activity thus involved is of a kind which furnishes just the training needed for the practical concerns of life. It is a mental activity out of which grows skill in doing, and skill in doing as a result of intelligent thinking should be one of the chief purposes of education.

It is the ambition of every boy at a very early age, to become the owner of a pocket knife. The reason for this is that the pocket knife is the tool which for him furnishes the largest opportunities for the exercise of his inherent desire to do. No one thinks of denying him the pocket knife because of the fear that its use will compel him to become a mere whittler; but on the contrary, the thoughtful parent will furnish it because of its value as an instrument in the training of the child's manual and mental powers.

Because in the manual training school the child learns to use a plane, or a saw, it does not follow that he is to be a carpenter. Because the girl learns to sew, that she must be a seamstress, or because she learns the value of foods and how to prepare them, that she must therefore be a cook. The use of the plane and the saw will be of value to the boy should he decide to become a carpenter. The training in sewing and cooking will be of value to the girl should she decide to become a seamstress or a cook, or should she be compelled to take the place of either seamstress or cook, even temporarily. But in any case, the training thus afforded will be of the highest value in the development of the individual because it demands first, concentration of attention, and thus develops that quality so essential to success in any field of human endeavor. Second, it requires organized thinking in the adaptation of means to ends, a demand which will be constant through life; and

third it demands an exercise of the will power resulting in *doing* for the realization of those ends, and through the doing, there comes a clarification of the thinking. It is not claimed that this sort of training and the knowledge and the skill which it brings, constitute all that is necessary in the education of the child, but the claim is made, and well made, that any system of education which leaves out this kind of training omits one of the essential requisites in the proper education of the child.

I believe that any one who will analyze closely the mental processes involved in the mastery of a lesson in grammar, in history, in geography, or in any of the branches taught in the public school, and compare them with the mental processes involved in making a working drawing of a model in wood, and then from that drawing, by the use of tools, reproducing the model, will see that for all purposes of mental training the latter is of no less value, to say the least, than the former. It has the added value in that it has developed control of the hand, and skill in its use, which will be of value in other fields of work where manual skill is required. More than this, if this work be done during school hours, it gives a change of position, a change of interest, and physical exercise which will send the pupil back to his purely mental tasks refreshed and invigorated, and able to accomplish more in the next half hour, than he would have been able to do in that half hour and in all the time given to the manual training exercise taken together.

If what has been said thus far is true, it must be evident that this work should be begun early in the school course, and adapted to the needs of the child at every stage in his development. To shut up the child from six to twelve years of age in a school room for six hours a day, and to compel him during that time to devote himself to a study of books, is little short of cruelty. It is the period of his life when the impulse toward physical activity is the strongest, and here at least nature has made no mistake. It is in the school system which denies the opportunities for the exercise of that

impulse that the mistake has been made. Manual training during this period furnishes an opportunity for the exercise of this physical impulse and at the same time directs and controls its activity for educational ends.

THE VALUE OF MANUAL TRAINING FROM THE INDUSTRIAL STANDPOINT.

Less than three hundred years ago, the territory which is now known as the United States was an unbroken wilderness. When we contrast the condition then with that of to-day and analyze the elements which have entered into the solution of the problem, we shall be struck by the fact that the conditions existing to-day are due primarily to thinking, and this will emphasize to us the value of an education which trains the thinking powers. We shall also be struck by the further thought that no step forward could be made toward the subjugation of this wilderness, and fitting it for the abode of man, no matter how much thinking were done, until the combined activities of hand and eye were brought into action to make the thinking serviceable for man's uses. We shall be further struck by the thought that when the hands have put into form the results of men's thinking, every new form becomes the starting point for a new process of thinking, resulting in higher ideals and more perfect adaptation of the forces of nature to man's uses, but which again could be realized only through the work of the hand. Thus thinking gives occasion for doing, doing invites and compels additional thinking, and this again further doing.

Mr. Hodge, the Secretary of the International Committee of the Y. M. C. A., after careful study of statistics relating to the subject of the educational preparation made by the young men of the United States, between the ages of sixteen and thirty-five, reports as follows: "Of thirteen million young men in the United States between these ages only five in every one hundred have been specially prepared for their occupations by education received at some kind of a school." He also found that of every one hundred

graduates of our grammar schools, only eight obtain their livelihood by means of the professions and commercial business, while the remaining ninety-two support themselves and their families by means of their hands. If the statistics are correct, and an examination into conditions existing in any community will seem to substantiate them, it must be evident that the education given in the grades below the high school, which does not make provision for some training of the hand and eye, as well as of the brain, is failing to do for these children what they have a right to demand shall be done for them, and what society has the highest interest in demanding shall be done for them.

If ninety-two out of every hundred children in the grades are to earn their living by their hands, does it not seem that the educational system is out of joint which fails to give them during the most impressionable and formative period of their lives, such training as will fit them the earlier to become skilled in whatever department of manual labor they may engage, and thus to make them more productive members of society, as well as more self-respecting? It is true that manual training dignifies labor, and gives to those who engage in it a respect for work as well as a habit of work, and an interest in their work.

One of the large purposes of the public school is to create wholesome interests. In what better field can one's interests be awakened than in this field which recognizes doing as of equal importance with thinking, and of infinitely more importance than idle dreaming?

This training both from an educational and from an industrial standpoint is of no less importance for girls, than for boys. The great mass of girls, as well as of boys, will find their life work in the labor of their hands. Whatever value educationally this training may have for the boy, it has also for the girl. While the girl may not, to the same extent as the boy, become a wage earner, in the discharge of her functions as a homemaker she will find constant demands upon her not only for thinking, but for doing as well. Under present conditions, the girl has not the same opportunities for that training in her own home which will fit her for later responsibilities that she formerly had. The length of the school year has been steadily increasing until at the

present time she is constantly in school for nine to ten months in the year. The demands which the school make upon her are so great that what little time and energy are left for learning the household arts in the home, even granting that conditions are such as to render that learning possible, are inadequate for the purpose. Such systematic training in these arts as is now given in many localities, and can be given in any school system, would make her more independent and more useful as a member of society, and would result in securing better conditions in her future home than are likely to exist without such training. The family would be better fed, and more economically fed, the home would be furnished with more taste and without greater expense, and she and her children dressed with better taste, and without greater cost, than would be possible without such training.

DEVELOPMENT OF MANUAL TRAINING IN THE SCHOOLS OF FOREIGN COUNTRIES.

FINLAND.

Within the present century, Finland was the first country to give a recognized place in the curriculum of its primary schools, to wood work and other manual exercise. In 1866, instruction in some branch of manual work such as wood work, basket work, tin work or iron work, was made compulsory in the Training Colleges for male teachers, and in all primary schools for boys in country districts.

NORWAY.

In Norway this branch of school work was first recognized in the official program in 1860. It is only within recent years that much attention has been given to the usefulness of a system of manual exercises as a branch of general primary education. Since 1891 it has been compulsory in all Norwegian Training Colleges and town schools.

SWEDEN.

In Sweden the movement for manual work in the schools was at first an effort to revive the old Swedish tradition of domestic industry. The failure of the early schools of domestic industry coupled with the experience of Finland, led the Swedish authorities to encourage the strictly educational side of the work, and to connect it under the name of Sloyd, with the elementary school curriculum.

In 1875, the well known training school for teachers in Sloyd, at Naas, was established by a local land owner, Herr Abrahamson. The work of this training school which for years has been under the direction of Herr Otto Salomon, has been one of the most important agencies in disseminating throughout northern Europe a knowledge of the theory and practice of wood work as a branch of the work of the primary schools. It is stated that twenty-four hundred teachers of Sloyd (including six hundred foreigners), had been trained in this school down to 1896.

In 1896, instruction in Sloyd wood work was given in two thousand schools in Sweden, and in all the seven training colleges of that country.

HOLLAND.

Since 1891, manual school work has been a compulsory subject in the training colleges for men. There are also courses to enable older teachers to acquire skill in giving instruction in manual work.

BELGIUM.

Instruction in manual work such as wood work, is given in many of the Belgian training colleges, but the subject is not obligatory either in the training colleges or in the schools. In many districts, however, advantage has been taken of the law of 1884, which empowers local authorities to introduce manual work as a school subject.

AUSTRIA.

Since 1883, this subject has been recognized as an optional branch of school work in Austrian town schools. Of late years special attention has been given to it in Vienna.

GERMANY.

In Germany there is in progress a movement for the introduction of wood work and other manual exercises as a part of primary education. This movement is inspired by the educational idea, rather than the industrial, and is steadily gaining ground. Its claim for state aid has been recognized: The governments of Prussia, Saxony, and Baden now make state contributions in aid of this branch of school work.

In 1898, manual exercises of various kinds had been introduced into six hundred schools in Germany. Wood work was taught in three hundred schools, metal work in forty-three, card board work in four hundred sixty-three. In many of the German training colleges, provision is now made for training teachers to give instruction in these and similar subjects.

SWITZERLAND.

Of the twenty-five Swiss Cantons, nineteen have made provision for wood work and other manual exercises in school. The expenses are borne to a large extent by public funds. The Federal government bears the whole expense incurred by the training colleges, in the special training of teachers for this department of school work.

FRANCE.

In 1882, a law was passed making manual work such as wood work, involving the use of the principal tools obligatory in the elementary schools of France. Although the enactment was a compulsory one, nothing seems to have been done for the special training of the teachers, and as a result, the carrying out of such an enactment was a matter of absolute impossibility. The experience of France in this matter illustrates the futil-

ity of making compulsory laws for the teaching of subjects in the schools, without making provision for the training of teachers, where special training is a necessity. In Paris, a program admirably arranged on educational lines is in operation in the city schools, but outside of this city the law seems to a large extent to have remained a dead letter.

ENGLAND.

In England the introduction of educational hand work of any kind in classes outside the kindergarten department, was first authorized by the state in 1890, when wood work was recognized as a school subject in the upper intermediate and grammar grades. In the larger cities considerable progress has been made, not only in the introduction of paper and card board work, clay modeling and wood work, but also in sewing, cooking, and laundry work.

RECOMMENDATIONS OF THE COMMISSION APPOINTED BY THE LORD LIEUTENANT OF IRELAND IN 1897, TO DETERMINE HOW FAR AND IN WHAT FORM, MANUAL AND PRACTICAL INSTRUCTION SHOULD BE INCLUDED IN THE EDUCATIONAL SYSTEM OF THE PRIMARY SCHOOLS UNDER THE BOARD OF NATIONAL EDUCATION IN IRELAND.

This commission was composed of fourteen of the most eminent men in Ireland, and continued its investigations for two years. The commission held ninety-three meetings of which fifty-seven were sittings for receiving evidence. They took the evidence of one hundred and eighty-six persons qualified to give information on matters under consideration, and visited one hundred and nineteen schools where manual and practical instruction were being given. Germany, France, Switzerland, Holland, and Belgium as well as England, and Scotland, were visited by members of the commission for the purpose of making personal investigation of the work being done in these countries.

The investigation made by this commission is probably the most thorough and exhaustive ever under-

taken. For that reason considerable space is taken in this report for a statement of their conclusions. As a result of their investigations, the commission reported as follows:

"We recommend that a course of woodwork, based on the lines of the Swedish system, with such modifications as the experience of other countries, especially of England and of Scotland, has shown to be useful, should at once be introduced into the program of the National Education Board. It will obviously be necessary for the board in this case, as in the case of the hand and eye training courses, to secure the services of competent organizers having practical experience in the work.

"We do not consider that woodwork should be made a compulsory subject. As to this, we direct attention to the evidence given by Herr Salomon. It is his opinion that one reason of the great and growing success of the Sloyd movement in Sweden is that in that country the subject has from the beginning been treated as an optional one. He gives some interesting figures. Sloyd was first introduced into the Swedish school programme in 1877. In the next year, the number of schools in which it was taught was 103. Nine years afterwards, in 1887, the number was 991. Seven years later, in 1894, it had grown to 1,887, or very nearly one-half of the total number of schools in Sweden. In 1895, a different method of distributing the grant for Sloyd teaching was adopted, the new unit of distribution being, not a school, but a "division," each division being a class of from 10 to 15 pupils. In that year grants were paid for 2,483 such classes. By way of contrast, Herr Salomon points to the cases of France and Norway, where the mistake was made of introducing woodwork as a compulsory subject. 'The result,' he says, 'has been unsuccessful. If the subject be introduced on a small scale, it will grow; our experience in Sweden has shown that if we begin with small arrangements, they will grow more and more.'

"So far from suggesting that the subject be made compulsory in Ireland, we are strongly of opinion, for reasons similar to those stated by us in reference to the hand and eye training courses that care should be taken by the National Education Board to hinder its being taken up by any but really competent teachers."

"We recommend that provision should at once be made for the introduction of courses of Hand and Eye Training in the Irish National Schools." (By Hand and Eye Training is meant paper cutting, folding, card board work, and clay modeling, accompanied by drawing.) "Such exercises obviously have special utility in forming a natural link between kindergarten occupations in the infants' classes, and exercises such as those in woodwork, in the higher classes in the school. But we consider that their value is practically independent of this, and that they may be introduced with great advantage into schools where, from any cause, they may neither have been preceded by the kindergarten occupations, on the one hand, nor be followed by more highly developed Manual Instruction, such as that in woodwork, on the other."

"As regards the amount of time to be allowed to the exercises of the Hand and Eye Training course, the evidence also shows that one and one-half or two hours per week is sufficient."

"We regard Cookery as a most important branch of practical instruction. We are of opinion that this useful subject should be encouraged in the schools. Instruction might in many cases be given by special teachers in Centers where the classes could be attended by the pupils from schools in the immediate neighborhood; in others the instruction in this subject must be given by the ordinary school teacher. In the latter case special provision must be made for the training of the teachers by itinerant teachers or otherwise. We consider that the teaching of this subject should be

continuous, not in the sense that it should be taught every day, but that it should be taught in one or more classes each week, throughout the year or a considerable part of it. The practical lessons should be supplemented by lessons in theory and both should be interdependent. The scientific principles underlying the subject should be explained and illustrated by experiments, as a part of the object lesson and other science lessons in the school. The importance of accuracy in weighing and measuring should be insisted upon; the blackboard should be used for the setting out of directions; the reasons of the processes should be explained; the children should write notes of the lesson, and a statement of the results of their work. These notes should be carefully revised by the teacher, bad handwriting, incorrect modes of expression, and errors in spelling, should be pointed out and corrected. The course should include demonstration lessons in which the processes should be gone through and explained by the teacher, and practice lessons in which the same processes should be gone through by the pupil. During the demonstration simple lectures should be given, dealing with all points of the subject; e. g., the current prices of provisions, the cost of a meal, the methods of selecting meat. The character of the instruction should be tested by occasional visits of the Inspector whilst the classes are being taught, and in such other way as the Commissioners of National Education may determine."

The Commission also recommended that instruction should be given under the head of domestic economy, upon the following subjects: Food; clothing; cleanliness; the dwelling; simple ailments, and in hygiene:— air; breathing; ventilation; water; alcoholic liquors; food. Upon this subject they say: "The acquiring of information on such subjects from text books is useful, but it is still more necessary that a power of applying this information should be gained. Such a power can only be gained by a thorough knowledge of the principles involved, such as can be obtained from actual experimental observation."

The general conclusions reached by the Commission are summed up in the following statement:—"We may at once express our strong conviction that Manual and Practical Instruction ought to be introduced, as far as possible, into all schools where it does not at present exist, and that, in those schools where it does exist, it ought to be largely developed and extended. We are satisfied that such a change will not involve any detriment to the literary education of the pupils, while it will contribute largely to develop their faculties, to quicken their intelligence, and to fit them better for their work in life."

THE SLOYD SYSTEM.

As the course in Woodwork recommended by the Commission, is based on the lines of the Swedish system of Sloyd, it may be well to state here the essential features of that system. Otto Salomon, in his book on the Theory of Educational Sloyd, thus explains it: "Sloyd is a system of Educational Handwork. In Sweden the

term Sloyd embraces many useful forms of handcraft, such as: work in wood, (carpentry, carving, fret work, and turnery); in metal, (brass, iron, and wire); leather; cardboard, and such occupations as brush making, coarse painting, straw plaiting, basket making, and book binding."

"The term Sloyd, in England, is generally understood to mean a system of Handwork in Wood. Why do we not then call it Carpentry? Because it differs from it in several essential features. There is no division of labour in Sloyd. Carpentry is a trade, and the principles which underlie it are entirely utilitarian, whereas Sloyd is solely a means of Formative Education."

"Its purpose is not to turn out Carpenters, but to develop the mental, moral, and physical powers of children; and it is the most effective instrument yet devised for securing this development."

"It gives a taste for rough labour as distinguished from clerical accomplishments; it cultivates manual dexterity, self-reliance, accuracy, carefulness, patience, perseverance, and especially does it train the faculty of attention and develop the powers of concentration."

"The methods employed in Sloyd are such as are best fitted to secure these ends."

"The objects which the child makes are equally useful with those of the carpenter; but, unlike the work of the carpenter, the value of the child's work does not exist in *them*, but in the *child* that made them."

The Sloyd system of Woodwork is developed through a series of objects technically termed Models. These begin with some exceedingly simple objects, such as printers, letter openers, labels, and the like. In the typical Sloyd course for boys at Naäs, there are fifty such Models, and thirty in the course for girls. They are so arranged that each represents some slight advance upon the one that preceded it in the course,—either some new tool, or some new use of a tool previously employed, being introduced in the making of it.

The utmost importance is attached to having each object, when made, the work of one individual pupil. Division of labor is rigorously excluded from the system; so much so, that whenever it is necessary for the teacher to show the pupil how any particular part of the work is to be done, he is to show this, not by doing a portion of the pupil's work for him, but by giving the demonstration upon another piece of wood. Self-reliance is one of the points of character to be developed by the system, and so the Sloyd model when completed must be, from beginning to end, the individual work of the pupil who made it.

GENERAL PRINCIPLES RELATING TO THE SERIES OF MODELS.

Salomon gives the following ten points on the choice of the model:

1. All objects of luxury—knick-knacks—should be excluded.
2. All Models should be serviceable in the house.
3. They should be capable of being finished by the children without help.
4. The Models should be of wood, and only wood should be worked in, as a rule.
5. The objects should not be polished or stained.
6. The objects made should be such as to require as little wood as possible.
7. The children should be taught to work in harder and softer kinds of wood.
8. Turnery and carvings should be used very little.
9. Objects chosen should be such as will develop the sense of form.
10. All the exercises (embraced by the particular kind of Sloyd in question) which the child is capable of making, should be properly graduated and included in the series in due proportions.

Mr. Salomon also gives the following eight principles on the arrangement of the series of Models:

1. The series should proceed from the easier to the more difficult, and from the simpler to the more complex.
2. A refreshing variety must be afforded.
3. In the early part of the series, the models should be capable of being quickly and easily made, and should be so progressively arranged that, later on, the objects arrived at should require more time and skill, and yet be capable of being done without help.
4. In the production of the early models, few tools should be required, but as the series progresses, new tools and manipulations should be introduced.
5. That every model should be so placed in the series, that the necessary qualifications for doing it exactly are found in the child, who therefore does not need the help of the teacher.
6. The models must be so arranged that the pupils can always make not only a serviceable, but an exact copy.
7. That the knife—as the fundamental tool—be used frequently, especially at the beginning.
8. That generally in the early models the softest wood should not be used.

OUTLINES OF COURSES OF STUDY IN MANUAL TRAINING AND DOMESTIC ECONOMY.

For the purpose of showing the character of work attempted in manual training and domestic economy in the elementary schools in some foreign countries and in some of the cities in the United States, the following outlines of courses are submitted:

MEMORANDUM ON MANUAL INSTRUCTION UNDER THE MANCHESTER SCHOOL BOARD, MANCHESTER, ENGLAND.

In Manchester, manual instruction is taught in eighteen of the elementary day schools, and is given out of school hours.

Teachers.—The ordinary teachers connected with the schools teach the subject where possible, that is, where there are qualified teachers of manual instruction on the staff.

In some cases, the head masters themselves teach it.

The teachers of manual instruction have all been specially trained for the work by the superintendent of manual instruction.

Twenty boys form the maximum number for one teacher at one time.

Fittings.—The manual rooms are fitted with single benches; a room thirty-two feet by twenty-four feet gives sufficient space for twenty benches.

Cost of fittings.—A room fitted up with twenty benches and a complete set of tools costs altogether about two hundred and fifty dollars.

If only one group of boys use this room, the cost of fitting up per head would be about twelve dollars, but generally four to twelve groups use the room.

Cost of material.—The average cost per pupil for material including drawing material, is fifty-five cents per year.

Scheme of manual instruction.—The scheme of manual instruction is educational as opposed to technical.

It may be said to be based, in regard to the series of models, on an adaptation of the principles of Sloyd teaching to the best traditions of English workshop practice.

Class teaching is only employed in drawing and demonstration lessons.

The teaching at the bench is individual.

No assistance whatever is given to the student beyond the demonstration of proper methods of work.

A high standard of finish and accuracy is insisted upon, and in order to make this possible the models are carefully graduated both in regard to drawing and bench work.

The models when made and approved become the property of the student.

The method of instruction is by drawing, demonstration, and bench work.

Each boy makes a dimensioned drawing, in plan and elevation, of the object he has to make, in a book large enough to hold a year's work. The model is then made before him, and at the same time a simple account is given of the theory of the construction of tools, and the structure and growth of timber. The bench work is then all done from the boy's own drawing and notes, the teacher simply intervening occasionally to correct improper methods of work.

The course of instruction is arranged to cover three years.

CONDENSED PROGRAM OF MANUAL OCCUPATIONS FOR ELEMENTARY SCHOOLS, PREPARED BY MR. A. SLUYS, DIRECTOR OF THE BRUSSELS MUNICIPAL TRAINING COLLEGE, BELGIUM.

Lower Standard.

First Year.—1. Clay modeling—Sphere, cube, and other simple geometrical forms; objects of real life, such as fruits, etc. Original forms of beauty.

2. Pea-work—Construction of forms of two and of three dimensions; various forms of life and beauty.

3. Paper-folding and cutting—Geometrical forms of two dimensions; forms of life and beauty.

Second Year.—Revision and extension of work of first year.

Intermediate Standard.

Third Year.—1. Clay modeling — Extension of work of first and second year.

2. Cardboard work — Making geometrical forms of two and three dimensions in cardboard, with scissors, knife, and gummed paper. Ornamentation of objects made by means of coloured paper, so as to develop taste for harmony of colour.

Fourth Year.—1. Cardboard work — Cutting out and putting together more advanced applications of geometrical forms and useful objects, as pencil-box, match-box, etc. Ornamentation as before.

Higher Standard.

Fifth Year.—1. Cardboard work.— More advanced work.

2. Wood work.— Beginning of wood work. Copies of a graduated series of objects.

Sixth Year.—1. Cardboard work.— More advanced work.

2. Wood work.— Further graduated exercises. Dovetailing and mortice-work, with T square. Putting together of objects consisting of several parts.

KINDS OF MANUAL WORK TAUGHT IN PARIS.

The Paris program includes five distinct kinds of work, namely:

1. Paper work.
2. Cardboard work.
3. Modeling and moulding clay.
4. Wood work.
5. Iron work.

If the school has a work shop, the five kinds of work are gone through. If there is no work shop, only the first three kinds are done. Out of 190 elementary boys' schools in Paris, 123 are at present provided with work shops. Of these, however, only 32 have the necessary fittings for iron work, so that the rest work in wood only.

PROGRAM FOLLOWED.

The following is the manner in which the occupations are portioned out among the standards:

Elementary Standard.

(Age of pupils, 7-9.)

First Year.—*Paper cutting and folding.*—Lines, angles, squares, surfaces, easy figures of three dimensions.

Paper weaving.—Various symmetrical designs.

Second Year.—Revision and extension of first year.

Intermediate Standard.

(9-11 years of age.)

First Year.—*Paper cutting.*—Triangles, polygons, with study of their geometrical properties. *Cardboard work.*—Regular solids, with applications. *Modeling in clay.*—Geometrical and ornamental figures in moderate relief.

Second Year.—Revision of first year's work. Commencement of *wood* and *iron work*.

Higher Standard.

(11-13 years of age.)

First Year.—*Cardboard work*—(where there is no wood or iron work.) *Modeling in clay.*—More advanced. *Wood and iron work.*

Second Year.—Same as first year.

In general, in wood and iron-work, there is no particular amount of work exacted for each year. The pupils do as much as they can; those who get on well, progress as fast as they are able. Twelve objects are, however, expected to be accomplished in a year.

The following manual training course for girls is taken from the report of the Superintendent of Public Instruction of the state of Michigan, for the year 1900.

"We give below a synopsis of a course of study for sewing, cooking and carpentry, selecting those features upon which there is a general agreement among educators. The work given for the kitchen is quite specific, but owing to lack of space, only a general outline is given."

MANUAL TRAINING COURSE FOR GIRLS.

Third Grade—(First Year Work.)

- | | |
|--------------------------------|------------------------------------|
| 1. Basting. | 6. Hemming. |
| 2. Running. | 7. Making work-bag. |
| 3. Stitching. | 8. Cutting and making under-waist. |
| 4. Running and back stitching. | 9. Stitching simple designs. |
| 5. Over casting (top sewing.) | |

Fourth Grade—(Second Year Work.)

- | | |
|----------------------|---|
| 1. French seam. | 7. Buttonholes. |
| 2. Patching. | 8. Sewing on buttons. |
| 3. Gathering—plain. | 9. Drafting skirt patterns. |
| 4. Gathering—French. | 10. Cutting and making skirt. |
| 5. Stroking gathers. | 11. Additional work; aprons, skirts, under-waists, etc. |
| 6. Putting on bands. | |

Fifth Grade—(Third Year Work)

- | | |
|----------------------|---|
| 1. Felling. | 8. Drafting patterns for some under garment. |
| 2. Gusset-making. | 9. Cutting and making the same. |
| 3. Hemstitching. | 10. Fancy stitching. |
| 4. Tucking. | 11. Additional work: night shirts, gowns, under-garments, drawers, shirt-waists, etc. |
| 5. Cloth darning. | |
| 6. Weaving. | |
| 7. Stocking darning. | |

Sixth Grade—(Fourth Year Work.)

- | | |
|--------------------------------|------------------------------------|
| 1. Review of pattern drafting. | 6. Basting and stitching the same. |
| 2. Sleeve. | 7. Finish seams. |
| 3. Collar. | 8. Tailor buttonholes. |
| 4. Waist. | 9. Loops and eyelets. |
| 5. Cutting the above. | 10. Sewing on hooks and eyes. |

Seventh Grade—(Fifth Year Work.)

(A)

Cooking.

- | | |
|--|--|
| 1. Discussion of — | (e) Make beef tea. |
| (a) What it is. | (f) Experiment with starch and flour. |
| (b) Effects upon foods. | 5. Make blanc mange. |
| 2. Fuel: wood, gas, coal. | 6. Make a salad — serve the same with vegetables or meat. |
| 3. Starting the fire. | 7. Boil potatoes; beets; onions; squash; etc. |
| 4. Boiling: | 8. Make vegetable soup. |
| (a) Note with thermometer changes of temperature of water. | 9. Boil oat meal — other cereals. Study cereals. |
| (b) Effects upon the white of an egg; of hot water; of continued boiling; of simmering. | 10. Boil rice: make custard. |
| (c) Study in similar manner effects upon fresh meat. Deduce that the proper temperature for cooking albumen is just below simmering point. | 11. Boil coffee, and cocoa. Study them. |
| (d) Experiment in similar manner with salted meats; smoked meats. | 12. Boil and bake macaroni. Study its manufacture. |
| | 13. Make corn starch pudding. Lessons on utensils used in cooking. |

(B)

Stewing:

Experiment with tough meats with and without acids — (lemon juice, etc.)

(C)

Broiling:

Study names and positions of steaks; selection of different meats. Toast bread. Make milk toast. Study utensils used in broiling.

(D)

Baking:

- | | |
|--|---|
| 1. Experiment with yeast, soda, cream of tartar, sour milk, baking powder. Show in each the presence of carbonic acid. (Lighted taper extinguished.) | 3. Make yeast. Discuss the yeast plant. |
| 2. Distinguish soda from cream of tartar. | 4. Make pop-overs, biscuits, muffins, cornbread, wheat bread, etc. |
| | 5. Bake meat; compare with broiled and boiled meat. Select best pieces; basting; solid and rolled roasts. |

Eighth Grade — (Sixth Year Work)

1. Review of previous year's work.
2. Particular attention to pastry cooking.
3. Household economics:—
 - (a) Prepare menus for different seasons.
 - (b) Prepare menus for certain number of persons at stipulated cost for each.
 - (c) Comparison of cost of different menus.

OUTLINE OF COURSE OF STUDY IN MANUAL AND DOMESTIC ARTS AND SEWING, IN THE PUBLIC SCHOOLS OF BROOKLINE, MASS.

Kindergarten.

Gifts and occupations.

Grade I.

Selected Kindergarten occupations. Constructive work in connection with other studies.

Grade II.

Paper cutting and folding. Constructive work in connection with number, language and history.

Grade III.

Clay modeling and cardboard work.

Use of scissors. Short seams. Basting, stitching, back-stitching, running, hem felled, oversewing, overcasting, hems measured and finished. Supplementary work: Work-bag of checked linen.

Grade IV.

Knife work with wood of two dimensions.

Three-inch model of French seam. Mark name by stitching. Hemmed-on patch. Stitched-in patch. Supplementary work: White muslin apron with drawing string.

Grade V.

Advanced work with the knife and simpler tools.

Oversewed patch used on lighter cloth. Darning stockings. Making button-holes. Supplementary work: Cooking outfit for sixth year, to be cut and prepared by girls of higher grade.

Grade VI.

Mechanical Drawing. Models constructed from drawings with the use of all common tools.

General care of house; airing, sweeping, dusting, cleaning, care of beds, table setting, washing of dishes, care of fire, stove and lamps.

Make tuck-measure; fold cloth for tucks; make gusset measure; cut and sew gusset in end of seam; sew gathered piece into a waistband; button-holes and loops; sew on buttons with tape; whip and sew on ruffle; darning. Supplementary work: White cloth skirt.

Grade VII.

Mechanical drawing. Projections of geometric solids. Working drawings.

Advanced Sloyd and wood carving.

Water and its effect upon foods. Milk as a typical food. Fat in cooking. Experiments with albumen and starch. Cooking of eggs, vegetables and cereals.

Bind white cloth sampler with thirty-five different models of sewing. Supplementary work: Diagrams for undergarments drafted for measurements; study different qualities of cloth.

Grade VIII.

Mechanical drawing. Continue work of Grade VII. Design copied and original.

Wood turning.

Combinations of starch and proteid. Cooking of fish and meat, meat soups and gelatine dishes. Yeast bread. Baking-powder mixtures.

Study flannels of different weight and their adaptation to different uses. Materials for stockings. Gingham and muslins. Fine darning. Use of sewing machine. Supplementary work: Flannel skirt finished with slight embroidery; hemstitched undergarments; Mexican work; lace work.

Grade IX.

Mechanical drawing continued.

Bench work. Elementary cabinet making.

Canning of fruit and jelly making. Plain pastry cake, simple puddings, salads, frozen dishes. Invalid cookery.

Shirt waist cut and fitted and made on machine. Dress lining fitted by the "art of pinning on." Dress cut, fitted and made. Hooks and eyes. Sewing on of braid, etc. Millinery begun. Notes taken of all lessons.

COURSE IN MANUAL TRAINING IN THE SCHOOLS OF LOS ANGELES, CALIFORNIA.

FIRST YEAR—A AND B CLASSES.

MANUAL TRAINING—*Clay Modeling*—Conceptional modeling, illustrating subject under consideration, based upon a study of the true type form.

Paper-Cutting and Paper-Folding—To be used as aids in developing and making practical the subject taught. Emphasize the utilitarian side by producing articles both useful and attractive.

Weaving—Continue work of kindergarten leading to the production of useful articles by braiding, twisting and weaving strands of various kinds, such as vegetable fiber, palm, raffa, tape, cord, and the production of crude fabrics in cotton, wool or silk; and cardboard darning.

SECOND YEAR—A AND B CLASSES.

MANUAL TRAINING—Continue paper-folding and cutting. Introduce color, showing the tints and shades in reproducing fruits and flowers by teaching use of the brush. This to be used in connection with drawing.

THIRD YEAR — A AND B CLASSES.

CARDBOARD SLOYD — Models to be constructed: Ruler, triangle, square tray, oblong tray, note book, thread winder, tag, calendar, wall pocket, frame, equilateral triangle, needle case, portfolio, basket with handle, match strike, triangular box, circle-maker, circular mat, book-mark, bonbon box, slanting tray, handkerchief box, woven basket, square box and cover, 30-degree triangle, triangular tray, triangular box and cover.

FOURTH YEAR — A AND B CLASSES.

CARDBOARD SLOYD — B 4 classes will take the same work as third year. A 4 classes will construct the following models: Ruler, triangle, folded tray, note book, thread winder or tag, frame, equilateral triangular box, portfolio, envelope, bonbon box, triangular tray. Pulp-board covered memorandum card, calendar back, lined tray, note book covers.

FIFTH YEAR — B CLASS.

SEWING — Seven stitches on burlap. Talk on cloth. Weaving on card. Even, uneven basting and running stitch. Design outlined with fine running stitch. Striped calico matched and top sewed. Overcasting. Back-stitch, half-back and combination stitch. French seam on bleached muslin. Mitred and square corners, cut in paper; mitred and square corners cut on muslin. Bias matching; bias cut in paper.

FIFTH YEAR — B CLASS.

SEWING — Talk on needles. Make small bag. French hem on damask. Fine hemming on bleached muslin. Manufacture of spool cotton. French fell. Skirt opening, gathering and placing of bands. Apron. Flannel.

FIFTH YEAR — A AND B CLASSES.

SLOYD — *Model No. 1, Pencil-Sharpener* — New exercises: Measuring, length planing, cross-cut sawing, gluing. New tools: Smoothing plane, try-square, ruler, back-saw.

Model No. 2, Flower Label — New exercises: End planing, oblique planing, sand-papering. New tools: Block plane, bench hook, sand-paper.

Model No. 3, Key Tag — New exercises: Edge filing, boring. New tools: Flat file, brad-awl.

Model No. 4, Mat — New exercises: Turning sawing, spoke-shaving. New tools: Turning saw, spoke-shave.

Model No. 5, Twine Winder — New exercises: Filing concave curves. New tools: Half-round file.

Model No. 6, Match Scratcher — New exercises: Horizontal boring. New tools: Center bit, bit brace.

Model No. 7, Key-board — New exercises: Fixing metal fittings, metal filing. New tools: Metal file.

Model No. 8, Paper Knife — New exercises: Curve filing, modeling with spoke shave. New tools: Cabinet scraper.

Model No. 9, Key Rack — New exercises: Edge filing. New tools: Round file.

SIXTH YEAR — B CLASS.

SEWING — Tape, hooks and eyes. Button-holes and buttons. Hemmed patch. Top-sewed patch. Patch on flannel. Stocking darning. Darning on cashmere. Slip stitching. Talk on scissors, pins and thimbles. Tucks, plain and hemstitched.

SIXTH YEAR — A CLASS.

SEWING — Manufacture of silk. Pattern of white shirt, draughted to measure. Making small skirt.

SIXTH YEAR — A AND B CLASSES.

LOYD — FIRST COURSE — *Model No. 1, Pencil-Sharpener* — New exercises: Measuring, rip-sawing, jack-planing, gluing. New tools: Ruler, rip-saw, jack-plane, try-square.

Model No. 2, Label — New exercises: End planing, oblique sawing, oblique planing. New tools: Block-plane, bench-hook.

Model No. 3, Key-Tag — New exercises: Edge filing (convex), boring (horizontal), sand-papering. New tools: Flat file, bit brace, center bit, sand-paper.

Model No. 4, Table Mat — New exercises: Turning, sawing, spoke-shaving. New tools: Turning saw, spoke-shave.

Model No. 5, Fish-line Winder — New exercises: Edge filing (concave). New tools: Half-round file.

Model No. 6, Elliptical Cutting Board — New exercises: Modeling with spoke-shave. New tools.

Model No. 7, Key Rack — New exercises: Filing interior edges, fixing metal fittings. New tools: Brad-awl.

Model No. 8, Match Safe — New exercises: Filing compound curves, nailing. New tools: Hammer.

SECOND COURSE — *Model No. 1, Elliptical Cutting Board* — New exercises: Modeling with spoke-shave.

Model No. 2, Match Safe — New exercises: Filing compound curves, flush joints, nailing.

Model No. 3, Comb Case — New exercises: Free-hand curves; oblique flush joints.

Model No. 4, Easel — New exercises: Stippling, toe nailing.

Model No. 5, Picture Frame — New exercises: Making ellipse, beveling, with file.

Model No. 6, Bracket — New exercises: Compound curves.

SEVENTH YEAR — B CLASS.

COOKERY — *Preliminary Lessons* — Names, uses and care of utensils. Washing of dishes. Dusting a room. Measuring. Principles of combustion and fire-building. Boiling of water.

Study of Food Principles — (1) Carbohydrates: Starches and sugars; source, composition, effect of heat, digestibility; cost as compared with other foods. (2) Proteids: Eggs, milk and fish, studied under same topics as carbohydrates. (3) Fats and oils: same sub-topics. Dishes to be prepared, applying scientific principles already learned.

SEVENTH YEAR — A CLASS.

COOKERY — Study of food principles, continued:

Proteids — Meat. Study of various cuts. Methods of cookery: roasting, baking, boiling, broiling.

Batters and Doughs — Study of soda and cream of tartar; of yeast, of flour: the use of baking powder and yeast as methods of making batters and doughs light.

Reverages — Growth; preparation for the market; preparation for the table; food value.

SEVENTH YEAR — A AND B CLASSES.

SEWING — Same as sixth year.

SLOYD — *Model No. 1, Flower Stick* — New exercises: Mark gauging, whittling. New tools: Marking gauge, knife.

Model No. 2, Penholder — New exercises: Boring (perpendicular), curve whittling, peg fitting. New tools: Drill bit.

Model No. 3, Flower Pot Stand — New exercises: To joint a surface, nail setting. New tools: Winding sticks, nailset.

Model No. 4, Corner Bracket — New exercises: Smooth planing. New tools: Smoothing plane.

Model No. 5, Hammer Handle — New exercises: Modeling symmetrical curves, scraping. New tools: Cabinet scraper.

Model No. 6, Whisk Broom Holder — New exercises: Gouging. New tools: Gouge.

• EIGHTH YEAR — B CLASS.

COOKERY — Canning and preserving. General cookery on lines followed in first year's work. Table setting and service. Bills of fare for breakfasts, lunches and dinners, cost estimated by pupils, and the meals actually prepared according to estimates. Cookery for the sick, with regard for correct dietetic value and dainty serving.

EIGHTH YEAR — A CLASS.

COOKERY — *Home Economics* — General household arrangements. Plumbing, heating and ventilating. Care of lamps and oil stoves. Care of beds and bedding. Cleaning of metals and woodwork. Removal of stains from household linen. Emergencies and home nursing.

EIGHTH YEAR — A AND B CLASSES.

MANUAL TRAINING — SLOYD — *Model No. 1, Nail Box* — New exercises: Flush joints, halving together joints. New tools: Chisel.

Model No. 2, Picture Frame — New exercises: Rabbeting, mitering. New tools: Rabbet plane, miter box.

Model No. 3, Towel Rack — New exercises: Clamping, countersinking, axle fitting, veining, stippling. New tools: Clamps, countersink, screw-driver, verner, carver's punch.

Model No. 4, Frame — New exercises: Half-lapping joints, chip carving, grooving with chisel. New tools: Cornerfirmer.

SEWING — Same as fifth year.

PRESENT PRACTICE AND SUGGESTIONS.

From an examination of the foregoing courses, and others adopted in different cities in this and other countries, it will appear that the present practice in schools where the work in manual training is best organized, is to give work in paper cutting and folding, cardboard work and clay modeling in the primary grades; in the lower intermediate grades, cardboard work and clay modeling, and in the higher intermediate grades, Sloyd wood work for the boys, and sewing for the girls. In the grammar grade Sloyd wood work for the boys, sewing and cooking for the girls. Drawing should be carried on throughout all the grades, in connection with the other lines of manual training. The work in paper cutting and folding with cardboard, and the sewing, may be carried on in the ordinary school room, and with but little expense for tools and material.

For the introduction of Sloyd wood work, a room should be fitted up with benches and tools for the accommodation of twenty pupils. Such a room can be furnished at an expense of about three hundred dollars. It would also be necessary to have a room specially fitted up for carrying on the work in cooking. This would cost according to equipment, from three hundred and fifty to five hundred dollars. The rooms equipped for wood work and cooking could be used as centers to which pupils from different schools could come for reasonable distances, for instruction. Giving each class of twenty pupils a two hour lesson once a week, three hundred different pupils could be accommodated in each room, and each set of pupils taught by a single teacher. In organizing the work, it is not necessary to begin all the different lines at the same time. The work in the primary and intermediate grades could be begun with the least expense, wood working could next be started, so as to carry on the instruction begun in the lower grades, and finally an equipment and teacher should be added for the cooking.

Considering the value of manual training, it is evident that the moderate expense connected with the introduction into the schools presents no serious difficulty.

The normal schools should at once undertake the training of grade teachers so that they may be able to carry on the different lines of manual training which may be undertaken without special equipment and special rooms. If this training were undertaken in the normal schools, they could send out every year five hundred young women who could give instruction in these subjects. There should be in connection with some one of the normal schools, a department devoted to training teachers of cooking, and the various lines of domestic economy, and also teachers who could take charge of the wood working department.

In organizing work in manual training, too much emphasis cannot be placed upon the necessity for employing teachers who are thoroughly trained for doing the work successfully. The artisan is not a teacher.

MODIFICATIONS IN PRESENT COURSES MADE NECESSARY BY
THE INTRODUCTION OF MANUAL TRAINING.

One of the objections urged against the incorporation of manual training in the common school courses, is that these courses are already overcrowded, and that any additional work would make too great demands upon pupils' time and energy, and would result in a deterioration of the work now carried on. The Parliamentary Commission on Manual and Practical Instruction in Primary Schools under the Board of National Education in Ireland, after an exhaustive investigation reported upon this point as follows: "From witness after witness in England and in Scotland, we learn, as the result of the experience gained since the establishment of the classes of wood work and similar instruction, that the instruction given in these classes is productive of the various advantages already specified in connection with Hand and Eye training exercises in the Lower Standard." (The work in Hand and Eye training is that previously specified as adapted for the primary and lower intermediate grades.) "It trains and quickens the intelligence of the pupils. It teaches them, in many practical ways, the useful lesson of the importance of exactness, even in matters of apparently small detail. It gives a useful variety to the work at school. So far from injuriously affecting in any way the book

work of the school it tends on the contrary, to the greater progress of the pupils in that portion of their work. It is popular with the pupils, with their parents, and with the teachers. It has come to be popular even with teachers who at the outset were opposed to it, either from a misconception of its nature, viewing it as something connected with trades, and therefore out of place in an elementary school, or from an apprehension, not unnatural in the absence of all experience as to its working, that it would interfere with the book work of the school."

The London school board says: "It is usually found that the time deducted from the ordinary school hours of boys who are undergoing courses of manual training, in no way causes a decreased efficiency in the ordinary subjects. Boys are also found to be more careful and observant, more self-reliant, and certainly are more likely to grow up with a real respect for the dignity of labour."

A French commission who carefully investigated this subject in France, reported that in the judgment of its members if one-half of the children's time in school were devoted to manual training, as much and as good work in the ordinary subjects of study would be done in the remaining half as were then being done in the full time. The unvarying reports from schools in the United States where manual training has been introduced are of the same tenor. That this conclusion is a reasonable one, will be evident to any person who realizes that children in the graded schools can not possibly devote the whole of the six hours of school time daily to profitable study of books. The manual training comes as a rest and change and enables the pupil to do better book work than could be done without it.

Granting this conclusion to be true, the objection will be still urged that the present program occupies every moment of the day, and no place can be found for manual training. If superintendents and teachers will examine with care the purposes of their daily work in the school room, and see that these purposes are such as can be justified in a rational scheme of education, and will then limit the demands upon the pupil to what is absolutely necessary to the accomplishment of these purposes, it will be found that much of the work now

done may be eliminated as unessential. It will also be found that one or two lessons in almost any subject of the course may be omitted each week for any half year, without loss to the pupils. One-half the time now devoted to the study of arithmetic in the graded schools could be given up to manual training without any loss to the pupils, either in arithmetical knowledge or skill at the end of the course. When wood work is begun, the drawing in connection with it might take the place of the regular work in drawing without loss to the pupil. Where geography is carried on as a daily recitation as low as the third grade, this subject might very well be omitted for one or two periods a week without damage. These statements are made upon the assumption that each day has a definite purpose in each subject, and that definite work is assigned to pupils for preparation which is essential for the realization of this purpose.

OPINIONS OF UNIVERSITY PRESIDENTS.

The Manual Training Magazine for January, 1901, prints the testimonies of a number of university presidents as to the value of manual training to the young man. These testimonies were elicited by Mr. Julius Stern, a graduate of the Northeast Manual Training School of Philadelphia, and a student in the law department of the University of Pennsylvania.

With acknowledgments to the editor of the Manual Training Magazine these letters are here reprinted:

From the President of Harvard University.

ASTICOU, ME., October 2, 1900.

DEAR SIR: I should like to see some form of manual training made part of the education at school of every boy who is to come to college. It not only trains the eye and the hand, but develops the habit of accuracy and thoroughness in any kind of work. Moreover, it develops the mental faculties of some boys better than books do.

Sincerely yours,

(Signed) CHARLES W. ELIOT.

From the President of the University of Chicago.

CHICAGO, October 11, 1900.

MY DEAR MR. STERN: Complying with your request, I am glad to say that our experience in the schools connected with the University of Chicago leads me to the conclusion that manual training in due proportion in the elementary and secondary schools gives breadth and power which become an effective means in higher education. Nor is this true merely in the case of those who are pursuing courses in engineering; other things being equal, every young man and young woman is the better fitted for the higher work of the university for having trained hands, and the power to plan and execute which comes through manual training.

Yours very truly,

(Signed) WILLIAM R. HARPER.

From the President of Johns Hopkins University.

President Daniel C. Gilman, of Johns Hopkins University, refers Mr. Stern to his published article on "A Plea for the Training of the Hand," in which he says:

"Manual training is an essential part of a good education, whether that education is restricted to the common school or carried on to the highest discipline of technical schools and universities."

From the Provost of the University of Pennsylvania.

PHILADELPHIA, October 22, 1900.

DEAR SIR: It is to me no matter of surprise that manual training has taken so prominent a place in modern education. The increasing use of laboratory methods in professional schools is in recognition of the fact that no amount of didactic teaching can cover the whole ground in any of the sciences, and that mental concepts must have the aid of actual experimentations. If the service of the trained eye and trained hand is an essential to the mental grasp of the higher sciences, it cannot but be that the training of these organs will be helpful to mental activities of any kind. With a proper apportionment of time, I believe that manual training may be made a part of the curriculum of any school; and that, so far from hindering, it will actually advance the education of the student in other and more abstract directions.

Sincerely yours,

(Signed) CHAS. C. HARRISON.

From the President of Lehigh University.

LEHIGH UNIVERSITY,
SOUTH BETHLEHEM, PA., October 9, 1900.

DEAR SIR: Our experience at Lehigh University with the graduates of the manual training schools of Philadelphia and other cities has been most favorable. The courses of instruction in these schools is an admirable preparation for engineering colleges. It is not merely that the boys have been taught the use of tools; it is rather that their minds have been trained through the medium of the eye and the hand. Desirable as it is to teach a boy the elements of handicraft, and useful as this accomplishment may be in after life, it is an entirely false idea of the purpose of manual training schools to suppose that this is the end aimed at. The education of a boy is the more complete and thorough the more avenues that are opened up for his enlightenment, and manual training, when systematically and intelligently carried out, gives the boy facts and thoughts which he would fail to get in the class-room.

(Signed) T. M. DROWN.

From the President of Cornell University.

ITHACA, N. Y., October 1, 1900.

DEAR SIR: In reply to your letter of September 28 I would say that I am a firm believer in an education which trains and develops the whole man. The hand is man's best servant, and some modicum of manual training should be included in the school training of every child of the present time.

Very truly yours,
(Signed) J. G. SCHURMAN.

From the President of the University of Michigan.

ANN ARBOR, October 24, 1899.

DEAR SIR: The introduction of manual training into our high schools is rapidly and deservedly gaining favor in this part of the country. It is now recognized that it has a distinct and positive intellectual and pedagogical value.

Yours truly,
(Signed) JAMES B. ANGELL.

From the President of Leland Stanford Junior University.

STANFORD UNIVERSITY, CAL., October 9, 1900.

DEAR SIR: I am in receipt of the catalogue of the Northeast Manual Training School of Philadelphia, and have examined it with much interest. I have always recognized the value of manual-training high schools, in which a good secondary education is given in connection with manual training. Such schools rise above the level of mere trade schools, and through their breadth of view, accompanied by practical drill, are doing a good work in America. We need more of them. Those interested in better education would not have such institutions take the place of the classical high school. They should rather develop side by side, and each should be equally open to all who can make use of their work. From this it follows that, if each is a good preparation for life, each is also a good preparation for college, and that the colleges and universities of the United States should recognize this fact in their entrance requirements.

We have a number of graduates from manual-training high schools among our students, and we find them fully capable of holding their own with the graduates of classical high schools.

Very truly yours,
(Signed) DAVID S. JORDAN.

From the President of the University of Wisconsin.

October 10, 1900.

DEAR SIR: I believe that every school which can afford to have a manual-training department will be profited by it in every way. The scholarship of the students need be in no way interfered with, and an interest will be created which is of sure value in after life.

Very respectfully yours,
(Signed) C. K. ADAMS,
President.

From the President of the University of Illinois.

CHAMPAIGN, ILL.

DEAR SIR: Replying to yours of the 27th ult. I will say that I have long been of the opinion that our educational work should give much larger recognition to industrial or manual training:

I think this remark applies to all of our work, from the primary to the university. I do not think that manual training is incompatible with intellectual development, but, on the contrary, that it promotes and supports healthful mental growth. I think it contributes to versatility, to contentment, to rational and productive living, and so to good citizenship; and accordingly that it should be recognized and helped on by all who have any interests in popular education, and particularly by all who have any share in the management of the public educational system of the country. I am,

Very truly yours,
(Signed) A. S. DRAPER,
President.

EQUIPMENT DESIRABLE FOR CARRYING ON THE INSTRUCTION
IN WOODWORK AND DOMESTIC ARTS.

The following lists have been prepared by request. It is hoped that they may be of value to those interested in organizing work in manual training and domestic arts in connection with the public schools. While not everything given in these lists is absolutely necessary to begin the work, they present what may be regarded as a desirable equipment. It will be observed that in most cases the cost of benches, tables, and furnishings, is high. In many cases these may be furnished by local manufacturers at much lower rates, thus materially reducing the cost.

LIST OF TOOLS FOR SLOYD WORK.

- 12 Toles double bench and vise.
- 6 22" Disston rip saws.
- 6 18" Disston hand saws.
- 12 10" Disston back saws.
- 4 14" turning saws.
- 12 coping saws with 1 doz. extra blades.
- 24 No. 3 iron smooth planes.
- 24 No. 5 iron jack planes.
- 12 iron spoke shaves.
- 24 No. 12 8" try-squares.
- 1 8" Tee bevel.
- 24 No. 65 marking gauges.
- 24 pr. 6" B. & C. dividers.
- 24 No. 1' 2" rules.
- 12 $\frac{1}{4}$ " Buck Bros. chisels.
- 12 $\frac{1}{2}$ " Buck Bros. chisels.
- 12 $\frac{3}{4}$ " Buck's gouges.
- 2 8" adj. braces.
- 1 set R. Jennings's auger bits $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ".
- 12 asstd. center bits, $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ ".
- 6 asstd. gimlet bits.
- 2 Buck Bros.' countersinks.
- 1 No. 1 hatchet.
- 3 B & G hammers.
- 3 rubber mallets.
- 2 B & G 4" screw drivers.
- 2 knurled nail sets.
- 12 10" wood files and handles.
- 1 saw file and handle.
- 1 rat tail file and handle.
- 6 handled brad awls.
- 3 $\frac{1}{2}$ Rd. cabinet scrapers.
- 3 Swan-neck cabinet scrapers.
- 2 No. 12 oilers.
- 2 mounted oilstones.
- 1 mounted grindstone.
- 12 Sloyd knives.
- 12 wood carving knives.
- 3 carvers' punches.
- 12 whisk brooms.
- 12 3" iron clamps.
- 2 doz. 45° triangles No. 2013, 7%.
- 2 doz. 30°x60° triangles No. 2012, 9.
- 2 doz. T squares No. 2079, 24.
- 1 box tacks No. 2446.
- 2 doz. rulers No. 1630.
- 2 doz. Sper comp.
- 1 ream drawing paper No. 10, 15/20.
- 1 set drawing of models.

The above list of tools and equipment for Sloyd work was prepared by Miss Anna Murray, Director of the Chicago Sloyd School.

The list furnishes an equipment for twenty-four pupils, and will cost about \$475 of which \$270 is estimated as the cost for benches. Benches at lower cost can be secured if desired.

EQUIPMENT FOR MANUAL TRAINING CENTERS FOR WOOD- WORK.

For a Class of 24 Pupils.

6 Benches for four pupils with Sheldon vises.....	\$138 00
24 Acme bench stops	12 00
1 Grindstone	10 00
24 Jack planes No. 5 Bailey, at \$1.53.....	36 72
8 Smooth planes No. 2 Bailey, at \$1.22.....	9 76
20 Blades for No. 5 planes, at 20c.....	4 00
10 Blades for No. 2 planes, at 20c.....	2 00
12 Back saws Bishop with etching, at 86c.....	10 32
6 Panel saws Bishop with etching, at \$1.36.....	8 16
8 Rip saws Bishop with etching, at \$1.50.....	9 00
3 Turning saws 14", at 90c.....	2 70
3 Turning saws 12", at 90c.....	2 70
6 Turning saw blades 14", at 14c.....	84
6 Turning saw blades 12", at 14c.....	84
6 Hammers, at 35c.....	2 10
12 Rubber mallets, at 75c.....	9 00
3 Common bit braces, at 75c.....	2 25
1 Set Jennings auger bit	4 00
6 Dowel bits 1¼" and 3¾", 2½", at 20c.....	1 20
2 Countersinks, at 20c.....	40
2 Screw driver bits, at 10c.....	20
2 Ollers, at 10c.....	20
2 ½" Chisels, at 40c.....	80
6 ¼" Chisels, at 40c.....	2 40
6 ⅝" Chisels, at 45c.....	2 70
24 1" Chisels	18 20
12 ⅞" Gouges (regular), at 40c.....	4 80
6 Common spokeshaves, at 25c.....	1 50
3 Gooseneck scrapers, at 20c.....	60
6 Straight cabinet scrapers, at 20c.....	1 20
24 Ebony line "T" squares	6 00
24 Ebony 45° triangles	6 00
2 Ebony 30° triangles, at 25c.....	50
24 Drawing boards, at 50c.....	12 00
24 Compasses, at 40c.....	9 60
12 Rubber erasers, at 8c.....	96
1 Blackboard compass, Haustin's patent	1 25
2 Grose thumb tacks, at 15c.....	30
24 12" Drawing rules, at 5c.....	1 20
3 1" Varnish brushes, at 21c.....	63
3 Varnish cups, at 23c.....	69
3 1½" Varnish brushes, at 23c.....	96
1 Slip stone, at 10c.....	10
6 Wachita oil stone, at 50c.....	3 00
24 Try squares, special, at 25c.....	12 00
1 "T" bevel	80

24	Rules 2 ft.; four fold, at 10c.....	2 40
24	Marking gauges, at 25c.....	6 00
6	Dividers, B & O, at 32c.....	1 92
6	Screw drivers, 7", at 25c.....	1 50
6	Nail sets, various sizes at 10c.....	60
12	Chip carving knives, at 20c.....	2 40
25	Whittling knives, Osborne, at 25c.....	6 25
4	Flat files, 8", at 20c.....	80
6	Half round files, 8", at 20c.....	1 20
1	Saw file	10
1	Bit file	15
1	File card and brush	25
6	Coping saw frames, at 20c.....	1 20
3	Doz. coping saw blades	36
12	Carving punches (6 squares and 6 half squares).....	1 80
6	Wood hand screws, No. 6, at 50c.....	3 00
6	Wood hand screws, No. 10, at 50c.....	3 00
24	Bench hooks, at 25c.....	6 00
1	Locker case	25 00
6	Counter brushes, at 50c.....	3 00
6	Whisk brooms, at 15c.....	90
24	Portable adjustable vises	36 00
		<hr/>
		\$453 12

The above list was prepared by Robert M. Smith, Supervisor of Manual Training in Chicago.

Some reduction can be made in this list if absolutely necessary, reducing the cost to about \$3co.

EQUIPMENT FOR SCHOOL KITCHEN.

The listing that follows is for a school kitchen that will accommodate classes of sixteen and includes only the necessary equipment to work the classes according to the group method.

The prices quoted are prices obtained from reliable furnishing houses on wholesale lots.

The general furnishings, including tables and cupboards, may be purchased at wholesale or made to order. Ready made furniture is less expensive and less satisfactory than that made to order. The list includes prices on both.

GENERAL FURNISHINGS.

1	Table for teacher (made to order) at \$10.00.....	\$10 00
4	Tables (drawers, cupboards, cutting and mixing boards), at \$25.00.....	100 00
9	Tables (bought of furnishing store) at \$6.00.....	54 00
	Extra hard wood tops, at \$2.00.....	18 00

1 Large steel range, from \$30.00 to.....	40 00
1 Refrigerator	12 00
1 Porcelain sink	30 00
1 Large cupboard for utensils (made to order).....	30 00
1 Large cupboard for supplies (made to order).....	10 00
1 Large cupboard for utensils (made to order).....	10 00
1 Large cupboard for supplies (made to order).....	2 00
1 Wood-box	3 00
1 ½ doz. stools, at 50c.....	2 00
1 Step-ladder	10 00
5 Small gas stoves, at \$2.00.....	1 00
1 Garbage can	75
1 Ash can	

TINWARE.

1 Coffee can	\$0 08
1 Tea canister	06
6 Pie pans, at 3c	18
6 Washington pie pans, at 5c.....	30
6 Royal sifters, at 10c.....	60
1 Milk strainer	10
6 Roll pans, at 25c.....	1 50
12 Bread stick pans (Russian iron), at 30c.....	3 60
6 Brick loaf pans (Russian iron), at 20c.....	1 20
6 Brick loaf pans (tin), at 10c.....	60
4 Round loaf cake pans with tubes, at 25c.....	1 00
1 Angel cake pan	32
2 Sets of layer cake pans, at 12c.....	24
1 Fish rack	10
2 Bread raisers, at 40c.....	80
6 Small dripping pans (sheet iron), at 25c.....	1 50
2 Medium dripping pans (sheet iron), at 40c.....	80
2 Large dripping pans, at 60c.....	1 20
9 Long-handled skimmers, at 3c.....	27
1 Plain skimmer	01
6 No. 2 graters, at 18c.....	1 08
6 Nutmeg graters, at 2c.....	12
2 Doz. muffin rings, at 10c.....	20
5 Sets of muffin pans, at 14c.....	70
1 Ginger bread sheet	15
5 Apple corers, at 2c.....	10
9 Biscuit cutters, at 1½c.....	15
9 Cookie cutters, at 1c.....	09
9 Doughnut cutters, at 2c.....	18
5 Dish drainers, at 15c.....	75
2 4-gal. lard cans, at 30c.....	60
9 Graduated measuring cups, at 9c.....	81
2 2-qt. pails, at 3c.....	06
1 6-qt. pail	11
6 Flour dredgers, at 2½c.....	15
6 Pepper boxes, at 1½c.....	09
6 Salt boxes, at 1½c.....	09
1 Pint funnel	02
1 2-qt. funnel	04
1 Jelly funnel	04
½ Dozen ice cream bricks, at \$2.25 per doz.....	1 13
9 No. 30 gravy strainers, at 4c.....	36
1 Squash strainer	20

1 Doz. assorted tin covers	45
1 Brown bread mold	1 65
1 Melon mold	45
1 Turk's head mold	35
1 Dust pan	20
1 No. 8 steamer	12
1 Double roaster	60
1 Turkey roaster	75
1 No. 3 steam cooker	1 90
1 Cake box	3 50
1 Washing boiler (copper bottom)	1 30
2 Ten pound sugar boxes, at 37½c.	75
1 Bread box (japanned)	60
3 Large flour boxes (japanned), at 42c.	1 26
1 Spice case (japanned)	45
2 Large trays (japanned)	1 40
2 Small trays (japanned), at 50c.	1 00

IRONWARE.

5 Chopping knives, at 10c.	50
1 Enterprise meat cutter	2 25
1 Meat cleaver	50
1 Set of kitchen scales	2 20
9 Small sheet iron frying pans, at 10c.	90
2 Medium sheet iron frying pans, at 25c.	50
1 Large sheet iron frying pan	45
2 Waffle irons, at 65c.	1 30
6 Small griddles, at 15c.	90
6 Gem irons, at 17c.	1 02
9 Dover egg beaters, at 6c.	54
6 Pan cake turners, at 6c.	36
1 Can opener	05
1 Set of flat irons	70
1 Ice pick	08
1 Match safe	25
1 Ice chisel	12
1 Cork screw	12
1 Kitchen saw	26
1 Coffee mill	1 00
1 Frying pan and basket	1 75
3 Corn cake pans, at 17c.	51
5 Silver fruit pressers, at 25c.	1 25
1 Sink scraper, at 14c.	14

GRANITE WARE.

9 No. 2 Berlin sauce pans, at 20c.	1 80
1 No. 03 Berlin sauce pans	27
1 No. 04 Berlin sauce pans	35
9 No. 52 rice boilers, at 35c.	3 15
1 No. 54 rice boiler	53
9 Lipped sauce pans, at 10c.	90
1 3-qt. preserve kettle	17
1 5-qt. preserve kettle	25
9 2-pt. pudding pans, at 9c.	81
9 3-pt. pudding pans, at 10c.	90

2 3-qt. pudding pans, at 14c.....	28
9 Pint measures, at 16c.....	1 44
2 1-qt. measures (graduated), at 21c.....	42
6 Pie plates, at 9c.....	54
2 2-qt. dippers, at 17c.....	34
9 13-in. basting spoons, at 7c.....	63
2 Colanders, at 25c.....	50
9 10-qt. dish pans, at 32c.....	2 88
5 Soap dishes, at 17c.....	85
1 Oblong baking pan	36
1 Coffee pot	50
1 Tea pot	35

ENAMEL WARE.

12 Assorted molds, at 20c.....	2 40
9 Soup ladles, at 20c.....	1 80
6 3-qt. water pitchers, at 90c.....	5 40
1 Oval baking pan	40
3 Round mixing bowls, at 50c.....	1 50
9 5-inch pudding pans, at 18c.....	1 62
9 6-inch pudding pans, at 20c.....	1 80

WIRE WARE.

2 Frying baskets, at 15c.....	30
9 No. 3 light broilers, at 10c.....	90
6 Potato mashers, at 10c.....	60
9 Surprise egg beaters, at 2c.....	18
1 No. 1 tea strainer	15
6 No. 2 tea strainers, at 20c.....	1 20
9 Bowl strainers, at 10c.....	90
1 No. 4 extension strainer	46
6 Pot cleaners, at 4c.....	24
6 Meat forks, at 4c.....	24
6 Small wire toasters, at 5c.....	30
6 No. 2 dish drainers, at 38c.....	2 28
1 Sink basket	15

CUTLERY.

2 Doz. large steel knives, at \$1.25.....	2 50
2 Doz. steel forks, at \$1.25.....	2 50
2 Doz. vegetable knives, at \$1.00.....	2 00
1 10-inch butcher knife	45
1 Carving set	2 00
1 Bread knife	1 00
1 Set Christy knives	1 20
1 Doz. spatules	3 50
1 Set of larding needles	50
1 Emery knife sharpener	12

PORCELAIN WARE.

1 1-qt. pitcher	14
1 2-qt. pitcher	20
12 Individual baking dishes, at 8c.....	96
9 2½ qt. mixing bowls, at 10c.....	90
1 8-qt. mixing bowl	50
9 1-pt. bowls, at 8c.....	72
9 1-qt. bowls, at 12c.....	1 08
18 Egg cups, at 4c.....	72
18 Dinner cups, at 4c.....	72
24 Dinner saucers, at 5c.....	1 20
24 Dinner plates, at 6c.....	1 44
24 Pie plates, at 5c.....	1 20
3 Platters, No. 8, No. 10, and No. 12.....	63
2 1-gallon stone jugs, at 9c.....	18
2 2-gal. stone jars, at 18c.....	36
1 Quart bean pot	25
12 Spice jars, at 5c.....	60

GLASS WARE.

24 Jelly glasses, at 18c. per doz.....	36
12 One-pint Mason jars, at 45c. per doz.....	45
12 One-quart Mason jars, at 50c. per doz.....	50
12 Candy jars	1 50
9 Half-pint measuring glasses, at 7c.....	.63
1 Lemon juicer	08
1 Pastry pin	35
1 Dairy thermometer	35

WOODEN WARE.

12 Slotted mixing spoons, at 8½c.....	1 00
12 Pastry spoons, at 8c.....	96
12 Rolling pins (holly), at 24c.....	2 88
6 Potato mashers, at 3c.....	18
5 13-inch chopping bowls, at 12½c.....	63
1 8-qt. freezer	3 15
1 Potato slicer	67
1 Pair butter spades	10
1 Butter ladle	08
1 Butter print	14
1 Salt box	22
1 Knife box	55
1 Spice mill	50
1 Scouring outfit	25
1 Pressing board	1 00

SILVER WARE.

2 Doz. German silver teaspoons, at \$1.00.....	2 00
2 Doz. German silver tablespoons, at \$2.00.....	4 00
1 Doz. forks	2 00
1 Doz. knives	2 50

LINEN.

2 Doz. dish towels	4 50
2 Doz. hand towels	3 50
1 ½ Doz. dish cloths	90
2 Doz. napkins	3 00
2 Table cloths	4 00
6 Tray cloths	3 00
Dusting cloths, holders, etc.	1 50

MISCELLANEOUS.

6 Asbestos mats, at 3c.	18
6 Dish mops, at 8c.	48
6 Soap shakers, at 8c.	48
2 Market baskets, at 10c.	20
1 Hamper	75
1 10-inch soap stone griddle	45

 \$536 29

This list of the equipments of a School Kitchen was prepared by Miss Laura G. Day, Director of Domestic Arts in the Stout Manual Training School, and involves good judgment as to what should be included and careful estimates on the cost. Some deviation is no doubt allowable. A less complete outfit might answer but it is not advisable to get along with less if means are at hand for supplying the full list.

The number of pupils provided for is sixteen. Computations may readily be made for classes of a different number. The class ought not to exceed twenty.

I. EQUIPMENT FOR BENCH WORK IN WOOD.

For 24 Pupils.

TOOLS KEPT IN THE TOP DRAWER OF THE BENCH.

12 Double benches of maple, plain tops and drawers.....	\$360 00
24 26" Simmons' or Disston's rip saws, 7 teeth.....	25 00
24 26" same, in cross cut saws	25 00
24 12" same, in back saws	25 00
24 24" Stanley stick rules	2 40
24 Sets Buck Bros.' or Butchers' socket firmer chisels, ½-1" ..	60 00
24 No. 12 Maydole claw hammers	9 00
24 8" Stanley Iron try squares	4 60
24 10" same, bevels, No. 13	6 40

24 8" same gauges	3 60
24 8" Drivewell screw drivers, No. 725	3 50
24 14" Bailey iron jack planes	34 00
24 Round mallets, 3"x5", No. 1.	2 00
24 8" Cook's dividers No. 2, one leg removable	13 00
24 1-lb. Wachita oil stones	12 00
24 Scratch awls with handles	2 00

TOOLS FOR GENERAL USE.

6 12" sweep, Spofford braces	6 00
6 Sets of R. Jennings' auger bits, $\frac{1}{4}$ to 1", by eighths	15 00
1 Clark's extension bit, $\frac{3}{4}$ " to 3"	1 00
12 Bailey's iron spoke shaves	2 00
6 6" steel cabinet scrapers, 3"x6"	1 20
6 6" rose reamers, square shanks	1 50
6 Brass oil cans	1 00
3 Sets of No. 42 Buck Bros.' or Butchers' gauges, beveled outside	15 00
1 Set same, beveled inside	5 00
2 Hand hewing axes	2 00
12 10" Nicholson's half round rasps	3 00
12 10" same of files	2 00
12 10" same of square files, one safe edge	2 50
12 Square shank twist drills, $\frac{1}{8}$ to $\frac{1}{4}$ "	2 00
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\$646 70	

II. EQUIPMENT FOR MECHANICAL DRAWING.

For 24 Pupils.

24 Special drawing tables, to accommodate eight pupils, tools and boards	\$360 00
24 Drawing boards of pine, 26" by 32"	12 00
24 Micrometer head tee squares	36 00
24 Cases of drawing tools, "Technology set," Watson's, Chicago	144 00
24 8"—45' black rubber triangles	10 80
24 8"—30/60' same	7 20
24 4"—45' celluloid triangles	7 20
24 4"—30/60' same	3 12
24 Hard rubber curves, elliptical	8 16
24 Same, spiral	12 00
24 Box wood triangular scales	18 00
24 Bottles of Higgins' general liquid India ink	4 80
1 Ream of German universal drawing paper	4 50
2 Boxes of thumb tacks	1 00
1 Box hard lead pencils	1 50
<hr/>	
\$630 28	

III. EQUIPMENT FOR WOOD TURNING.

For 12 Pupils.

12 Wood turning lathes, Putnam, Reed or Vandervoort...	\$600 00
12 Sets tools of gauges and chisels, Buck Bros.' or Butchers'	76 80
12 Parting tools, No. 18, $\frac{1}{8}$ "	6 00
12 8" dividers, winged	3 50
12 8" outside winged calipers	2 94
12 Foot rules	1 20
12 Whisk brushes	2 00
12 Wachita slip stones.....	2 40
12 Wachita oil stones	6 00
	<hr/>
	\$700 84

The above list of equipment needed for manual training in the mechanic arts lines, was prepared by Mr. F. W. Kendall, Director of Mechanic Arts in the Stout Manual Training School, Menomonie, Wis. The prices are based upon estimates supplied by hardware dealers at the time of equipping the Stout Manual Training School. This school is one of the best equipped in the United States, both as to quantity and quality of material. The list is presented as showing the expense for first class equipment for a manual training school, and not as indicating what is necessary for the equipment of a single room for wood work, adapted to the needs of elementary school.



REPORT OF THE SECRETARY
OF THE
STATE BOARD OF IMMIGRATION
OF THE
STATE OF WISCONSIN

FOR THE

Two Fiscal Years Ending September 30, 1900.

GEORGE W. TAYLOR, Secretary.



MADISON, WISCONSIN:
DEMOCRAT PRINTING COMPANY, STATE PRINTER.
1901.



REPORT

OF THE

STATE BOARD OF IMMIGRATION.

*To His Excellency, EDWARD SCOFIELD, Governor of Wisconsin,
and the Honorable WM. H. FROELICH, Secretary of State,
State Board of Immigration, Madison, Wisconsin.*

The State Board of Immigration was created by Act of legislature of 1899, and by limitation of law ceases to exist on April 1, 1901. Under this law the board was comprised of the governor and secretary of state.

As I had the honor to be appointed secretary of your board in compliance with Section 2, Chapter 279, Laws of 1899, it is but right and proper that I should report to you, and through you to the people of the state, something of the work that has been accomplished in the settlement of northern Wisconsin during the past two years. At the outset, while it is my wish to go into figures just as much as possible, it has been found impossible to collect as much statistical information as has been desired. By law the registers of deeds report to the secretary of state on September 30th. The end of the fiscal year of the U. S. government expires on June 30th, and it has been almost impossible to collect additional figures. Many letters and inquiries sent out to different counties remain unanswered.

The legislature of 1899 withdrew from market all state lands save what is known as the "State Park Lands," for re-appraisement and re-valuation. There have been many inquiries received as regards price on these lands, but no price could be made nor effort to settle them, as up to this time no re-valuation and appraisement of them has been made.

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The work of the board necessarily has been that of promotion and publicity. It is safe to say that at no time in its history has the northern part of the state been as well advertised as it is today. Believing and accepting as a guide the experience of others, it has been the aim of the board to draw new settlers from older and more thickly settled states, notably, Illinois, Iowa, Indiana and Minnesota, while at the same time the southern counties of our own state have not been neglected. Many farmers living in southern Wisconsin, whose sons grown to an age when they desire to make homes for themselves, have sent these sons to northern Wisconsin, where they are now busily engaged in forming what will be before many years the garden spot of the state.

A significant fact in the development of northern Wisconsin is, that outside capital seeks information and investment in our wild lands as never before, a notable instance of which, is the recent purchase of a 50,000-acre tract of land in one of our northern counties by a corporation organized in a sister state. This corporation will develop and settle these lands. Other instances of this nature might be mentioned, but this one will probably suffice.

It would not be fair in passing not to speak of the work of the press. The daily press as well as the agricultural papers of the state have done noble work in placing before their readers the advantages of northern Wisconsin. Amongst the foremost papers that have done especially good work in this respect, are the Milwaukee Journal, the Racine Agriculturist and the American Sheep Breeder of Chicago. Organized a little over a year ago, the Wisconsin Valley Advancement Association has done good work in calling attention to the resources agriculturally in the Wisconsin Valley, and to the numerous undeveloped water powers on that stream. From reports received at their annual meeting just held, work will be pushed the coming year with greater vigor than ever.

The work of the American Sheep Breeder has turned the eyes of sheep men all over the West to Wisconsin as a coming sheep country, with the result that already there is a perceptible increase in the flocks. One of the largest sheep breeders in the

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West, who made a careful examination of northern Wisconsin, writes: "You have not overestimated your state; it is an ideal sheep country." The raising and breeding of Angora goats is still in the experimental stage, as far as northern Wisconsin is concerned; results will be watched with great interest. Hon. A. R. Hall, of Dunn county, is keeping a careful record of results, and will in the course of another year, be able to give to prospective breeders a great deal of valuable information.

A careful report has been kept of name and address of all inquiring as to the merits of northern Wisconsin, agriculturally or otherwise, and to such inquirers printed matter has been sent giving description of land, kind of soil, crops raised. This has been supplemented by a letter giving as far as possible detailed information, maps and diagrams, in order that the home-seeker might locate himself as easily as possible. No preference has been shown as regards the settlement of one particular locality, but at all times it has been the aim of the board to so direct the home-seeker that he might settle in that county in which from letter and inquiries asked they would seem to be the best suited. Comparison of the list shows a record of over 2,000 such inquiries. From June 1st, 1899, when the work was commenced, to December 1, 1900, over 250,000 pieces of printed matter have been distributed. The secretary has traveled as far East as Pittsburg, and to Omaha on the West, while temporary assistants have visited Pennsylvania, portions of New York and parts of Ohio in an extended advertising and soliciting trip. State and Street Fairs in neighboring states, as well as our own State and County Fairs have been visited, and much advertising matter distributed.

The railroads of the state have been most energetic in pushing settlement, and making to the home-seeker favorable terms of transportation and freight. The Soo railroad, which practically has no land at all for sale, is now engaged in the preparation of a book on northern Wisconsin, which it will give wide distribution.

The Pan-American Exhibition at Buffalo during the year 1901 should not be lost sight of as a place to do most effective work in bringing settlers into the state. The time is ripe to secure

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many new settlers from New York and Pennsylvania if proper work is done. More can be reached at Buffalo in a short space of time than in any other way. I most heartily recommend that a competent person be stationed at the Wisconsin building at Buffalo, whose duty it shall be to distribute proper printed matter, get names and addresses, and in fact maintain during the exhibition a Bureau of Information for the State of Wisconsin. There are a large number of people who will be only too glad to come to the state as settlers when once they are properly and correctly informed as to the natural wealth and resources of the state.

Under the present law it is well nigh impossible to obtain from county officials the information necessary to correctly estimate the growth of a given part of the state. Should the legislature in its wisdom see fit to re-enact an immigration law for the state, I would most earnestly recommend that a clause in the law compel county officials to give to the State Board of Immigration such facts as may be deemed necessary for a comprehensive review of the growth of the state when called upon to do so.

In my judgment the work of advertising and bringing settlers into Northern Wisconsin should be continued for at least four years more. It will well repay the money expended by the state along those lines. In this connection some figures may be of interest. A report of the Ashland district from the government land office at Ashland, dated June 30, 1900, reports:

Report for fiscal year ending June 30, 1899.

Name of County.	Area of Acres disposed of.
Ashland	5,603.00
Bayfield	8,977.67
Burnett	696.00
Douglas	7,730.00
Iron	1,860.00
Sawyer	2,220.00
Washburn	1,530.00
Total	28,562.67

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Report for fiscal year ending June 30, 1900.

Ashland	5,613.18
Bayfield	9,031.45
Burnett	747.07
Douglas	7,763.21
Iron	1,812.44
Sawyer	2,233.56
Washburn	1,541.35
Total	28,742.26

Comparison of the report for the year 1899 with that for 1900 shows during corresponding time an increase of acres of land disposed of, 17,959. A later report from the Ashland land office shows from April 1, 1899, to December 31, 1899, 21,248.81 acres entered, while from June 1, 1900, to November 15, 1900, 25,635.18 acres were entered. The Ashland Board of Immigration under date of November 23, reports from April 1, to December 31, 1899, County lands sold to new settlers, 3,360 acres; from January 1, 1900, to December 1, 1900, 17,040 acres. The nationality of the settlers settling on these lands are Germans from neighboring states, and Swedes, Norwegians and some Finns. The county appropriated to the use of the County Board of Immigration \$450, which has been expended in pamphlets and literature distributed throughout the country, as well as in foreign countries.

The government land office at Wausau reports the number of acres of land entered under the homestead law at their office from April 1, 1899, to December 1, 1900, as 58,766.34 acres. The Eau Claire office reports from April 1, 1899, to December 31, 1899, 22,897.45 acres, and from January 1, 1900, to December 1, 1900, 36,169.58 acres, showing an increase also from that office. These lands all being entered under the homestead law.

The report from Burnett county is as follows: About 225 families have settled in Burnett county within the past two years; a few more this year than last. They will occupy about 35,000 acres. During the last year the Omaha railroad sold about 7,000 acres to actual settlers in this county, much more than they have sold before in one year. A few well improved farms have been sold to new settlers, but most of the new-comers are going on to wild lands, many on homesteads. About half

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of the new settlers are well Americanized Scandinavians, the others are American, with a few Germans. County appropriated \$75.00 for the purpose of advertising the county in the year 1899, and \$60.00 in 1900. Chances are, the outlook is for a great increase of settlement during the coming year.

From St. Croix county, through the courtesy of Mr. Webster, who has taken much time to ascertain as near correctly as possible, the total number of acres sold in the county from April 1, 1899, to June 1st, 1900, 10,412. Number of acres sold from January 1, 1900, to December 1, 1900, 14,215. Average price for unimproved lands sold during the year, 1899, \$7.50 per acre. Average price for unimproved lands from January 1, 1900, to December 1, 1900, is about \$8.75. Average price on the improved and partially improved lands sold from January 1, 1900, to December 1, 1900, \$22.50 per acre. There are a great many people coming to St. Croix county to buy improved farms; they are coming largely from southern Wisconsin, Minnesota, Iowa, Nebraska, Kansas, Illinois and other states. The buyers of the unimproved lands are mostly from southern Minnesota, Iowa, Illinois and Nebraska. Most of the buyers of the unimproved lands are actual settlers, and have taken possession and will make improvements on the land.

Douglas County. — The sales of land to settlers in Douglas county have not increased much during the past year; not over thirty or forty new settlers have come in. Price of land, however, is about double; they were exceedingly low prior to 1900. Plenty of good land in Douglas County can be had at from \$2.00 to \$5.00 an acre on easy terms.

Polk County. — No appropriation has been made during the last year by the county board. The report to the Secretary of State as shown by the table below, indicates an increase in number of acres sold for the year 1900 over that of 1899.

Barron County. — We have not been able to get an exact list for the years 1899 and 1900 for comparison. The Advocate reports the following list of acres sold during the past year :

Secretary's Report.

Names of Towns, Cities or Villages.	Number of Acres or Lots.
Almona	3,214
Barron	2,140
Cumberland	7,857
Chetek	2,198
Clinton	2,470
Cedar Lake	2,302
Dallas	3,370
Doyre	2,620
Maple Grove	3,101
Oak Grove	8,069
Prairie Farm	2,711
Rice Lake	1,080
Sumner	1,100
Stanley	1,520
Stanford	3,160
Turtle Lake	3,003
Vance Creek	2,470
City of Barron	95
City of Chetek	31
City of Cumberland	39
City of Rice Lake	81
Village of Cameron	14
Village of Turtle Lake	22

The increase of population in Barron County has been most satisfactory.

Lincoln County.—From April 1, 1899 to December 31, 1899, the report shows 12,000 acres sold to new settlers, and from January 1, 1900, to December 1, 1900, 20,000 acres sold; average price per acre \$5.50; nationality of settlers are Germans and Norwegians. An appropriation was made by the county, and was expended in books and advertising pamphlets setting forth the agricultural possibilities of the county.

No report from Bayfield, Chippewa, Clark, Forest, Florence, Iron, Jackson, Langlade, Marathon, Oconto, Oneida, Price, Shawano, Taylor, Vilas, Washburn counties, save what is afforded by the registers' report to the secretary of state under date of September 30, a copy of which is attached to and made a part of this report.

The La Crosse Farm Land Company reports that for the year 1899 their sales of land was about 5,000 acres, 2,000 of which was in Jackson county, and 3,000 in Clark county. During the present season they have sold or contracted for sale about 24,000 acres. The average price has been in the neighborhood of \$10 per acre. Sales have been most all made to American farmers from Dakota, Iowa, Illinois and Indiana.

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The growth of Marinette County has been very satisfactory during the past two years. On account of the extremely wet weather, and the presidential campaign, the settlement of the county was somewhat retarded this fall. There are four land companies making it their business to bring in new settlers to Marinette county. A good portion of this land has been sold on contract, and is not a matter of record, but is safe to say that more new settlers have come into the county of Marinette during the past year than in any previous two years for many years.

The Wisconsin Central Railroad in reply to an inquiry, report that their land sales to actual settlers from April 1, 1899, to June 1, 1899, amounted to 25,000 acres. From January 1, 1900, to December 1, 1900, to actual settlers 33,000 acres. From April 1, 1899, to June 1, 1900, they located over 300 families between Abbotsford and Ashland, comprising about 1,100 people. From January 1, 1900, to December 1, 1900, 450 families were located, furnishing a population of about 1,500 people. The average price for land sold during the period was \$5.25 per acre. They report that about 75 per cent. of the people located were Germans.

From Benson and Andeton, from March 1, 1899, to December 31, 1899, they sold to actual settlers 2,848 acres, and from January 31, 1900, to October 1, 1900, 7,040. The majority of settlers to whom they sold lands were Germans, a small percentage Scandinavians.

It is believed from letters received all over the state, and from correspondence of homeseekers from neighboring states, that the immigration into northern Wisconsin if properly managed during the next four years, will be much greater than for the past two years, and in that respect the settlement of northern Wisconsin for the past two years has been eminently satisfactory.

As from report of register of deeds on file in the office of the secretary of state, under date of September 30th:—

Secretary's Report.

	Total number Acres sold in County, 1899.	Total number Acres sold in County, 1900.
Ashland	24,795	46,798
Barron	42,505	.....
Bayfield	73,532	111,376
Burnett	19,381	19,293
Chippewa	66,463	139,794
Clark	115,930	139,324
Douglas	55,377	109,251
Eau Claire	31,924	35,522
Florence	6,150	13,801
Forest	49,270	82,109
Iron	21,916	.....
Jackson	36,074	44,073
Langlade	79,356	86,374
Lincoln	34,772	104,912
Marathon	106,629	.....
Marinette	37,390	84,527
Oconto	41,664	74,338
Oneida	21,640	53,268
Polk	23,840	35,511
Price	37,257	212,717
St. Croix	30,712	43,112
Sawyer	5,896	103,640
Shawano	69,106	66,895
Taylor	23,810	77,228
Vilas	30,001	10,348
Washburn	49,558	67,017
Wood	60,132	69,918

The law creating the State Board of Immigration provided for the appointment of an assistant secretary. It was not deemed best to appoint such an assistant, but different persons have at different times been sent into the counties of northern Wisconsin, who under Section 3 of the law, endeavored to organize in the counties visited, county boards of immigration.

Taylor, Price, Ashland, Bayfield, Douglas, Langlade, Vilas, Oconto, Shawano, Marathon, Lincoln, Forest, Florence, Sawyer, Washburn, Barron and St. Croix counties were thus visited.

In most of these counties the work was successful; county boards of immigration were organized in many of them; appropriations were made to carry on the work. The work would have been successful in all of these counties so far as the appropriation of money was concerned, were it not for a doubt in the minds of the members of the county boards as to the legality of such an appropriation. Should a new law be passed, a clause in the law authorizing county boards to make such an appropriation, would be of vast benefit. These several county immi-

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gration boards have contributed in no small degree to the success of the work in northern Wisconsin. Your secretary has individually gone with and located in different counties in northern Wisconsin, over fifty families in the last two years. At the present time he is in correspondence with and has more than a reasonable chance of locating over sixty more families. Among these are several large cattle men, who desire quite a tract of land for the purpose of engaging in the raising and handling of cattle on a large scale.

The correspondence for the month of December has been three times as heavy as one year ago. Indications are that an early spring movement to Wisconsin will be much in excess of that of a year ago.

The failure of the county boards of immigration as organized, to report directly to the secretary of the State Board of Immigration the increase in population in their several counties, is the reason that no more figures can be presented as to the growth of definite sections in northern Wisconsin.

Respectfully submitted,

GEO. W. TAYLOR, |
Secretary.





